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# MILITARY HANDBOOKS

EDITED BY

MAJ.-GEN. C. B. BRACKETTBURY

UC-NRLF



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## THE ELEMENTS OF MODERN TACTICS

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THE  
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*PRACTICALLY APPLIED TO ENGLISH FORMATIONS*

BY

LIEUT.-COL. WILKINSON J. SHAW, M.A.

LATE 73D REGT. AND 102D FUSILIERS : LATE GARRISON INSTRUCTOR AT ALDERSHOT

*WITH THIRTY-ONE PLATES AND MAPS*

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*Military Handbooks for Officers & Non-commissioned Officers*

EDITED BY

MAJOR-GENERAL C. B. BRACKENBURY, R.A.

DIRECTOR OF THE ARTILLERY COLLEGE

*SEVENTH EDITION, REVISED AND CORRECTED*

LONDON

KEGAN PAUL, TRENCH, TRÜBNER, & CO. LTD.

1890



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# PREFACE

TO

## THE SEVENTH EDITION.

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A NEW edition of this book having become necessary, the opportunity has been taken for giving it such a thorough revision as would bring it abreast of the latest improvements in the military art. The old work has been carefully examined and improved, while some new matter has been introduced by the author, especially on the subjects of convoys and mounted infantry. I beg once more to point out that it is not a drill book but a work on elementary tactics, while it will be seen that some points on which the first edition was considered rather heterodox are now mere household words in the British army. When the book first saw the light such very minor tactics as it treated were hardly thought worthy of attention. To-day they form one of the most important features of military training at our camps of exercise, and will ere long be assiduously practised in every British garrison in the world ; for it is now fully understood that the tactics of a great army are based on those of small groups of men, that generals



do not become divinely inspired by assuming the cocked hat and plume, and that the art of winning battles must be learnt, as every other art is, by beginning from the beginning. The author, Lieut.-Col. Wilkinson Shaw, has devoted much time and labour to this edition, which will, it may be hoped, be found useful to all the land forces of the Queen.

C. B. BRACKENBURY,  
Major-General.

In the preparation of this manual the following works, published in English or French, have been consulted or in some measure made use of, and are recommended to the student's attention :

- 'Aperçus sur quelques détails de la Guerre.' Bugeaud.
- 'Attack and Defence of Positions and Localities.' Schaw.
- 'Avant-postes de Cavalerie Légère.' De Brack.
- 'Cavalry Field Duty.' Von Mirus.<sup>1</sup>
- 'Cavalry Outpost Drill.' Smith.
- 'Elementary Course of Fortification.' Phillips.
- 'Elementary Tactics of Prussian Infantry.'<sup>1</sup>
- 'Elements of Field-Artillery.' Knollys.
- 'Étude sur le Combat à pied de la Cavalerie.' Bonié.
- 'Exercices Tactics de Combat.' Bestagno.<sup>2</sup>
- 'Extracts from an Infantry Captain's Journal.' Von Arnim.<sup>1</sup>
- 'Guide Manuel du Chef de Patrouille.'
- 'Instruction Pratique sur le service de l'Infanterie en Campagne.'
- 'Instruction Pratique sur le service de la Cavalerie en Campagne.'
- 'Instruction Pratique de la Compagnie de l'Infanterie.'
- 'Instruction Tactique de l'Infanterie Italienne.'<sup>2</sup>
- 'La Petite Guerre.' W. Rüstow.<sup>1</sup>
- 'Minor Tactics.' Clery.
- 'On Outposts.' Hamley.

<sup>1</sup> Translated from the German.

<sup>2</sup> Translated from the Italian.

- 'Outpost and Patrol Duty for Prussian Infantry.' Von Waldersee.<sup>1</sup>
- 'Précis of Modern Tactics.' Home. v
- 'Principles of Outpost Duty.' Hale.
- 'Règlement d'Exercices de l'Infanterie Austro-hongroise.'<sup>1</sup>
- 'Règlement d'Exercices de l'Infanterie Belge.'
- 'Soldier's Pocket-book.' Wolseley. v
- 'Studies in the New Infantry Tactics.' Von Scherff.<sup>1</sup> ✓
- 'Studies in Troop-leading.' Von V. du Vernois.<sup>1</sup> ✓
- 'Tactical Examples.' H. Helvig.<sup>1</sup>
- 'Tactical Use of the Three Arms.' Lippitt.
- 'Tactique Élémentaire, et Tactique Appliquée.' P. A. Paris.<sup>1</sup>
- 'Tactique de l'Artillerie de Campagne.' E. Hoffbauer.<sup>1</sup>
- 'Instructions for Cavalry.' Von Schmidt.<sup>1</sup>
- 'Field Artillery.' Pratt.
- 'Cavalry in Modern War.' Trench.
- 'Infantry Fire Tactics.' Mayne. v
- 'History of Cavalry.' Denison.
- 'Russian Campaigns in Turkey.' Greene. v
- 'History of American War.' Fletcher.
- 'Regulations for Mounted Infantry.' 1889.
- 'Manual for Field Service, R.A.' 1889.
- 'Field Artillery Drill.' 1889.
- 'Manual of Infantry Drill.' 1889.
- 'Regulations for Cavalry.' 1887.

Add to the above the latest revisions (1889) of the Field Exercise and Musketry Regulations for the German Infantry.

Also various lectures and discussions, at meetings of the Aldershot Military Society.

In all the stages of his work the author has derived much benefit from the friendly criticism and advice of Major-General Brackenbury, R.A., the Editor of this series, whose practical experience of the details of modern warfare, gained by presence during the three great European campaigns of our time, has given to his suggestions additional weight.

In the preparation of the First Edition the author received

<sup>1</sup> Translated from the German.

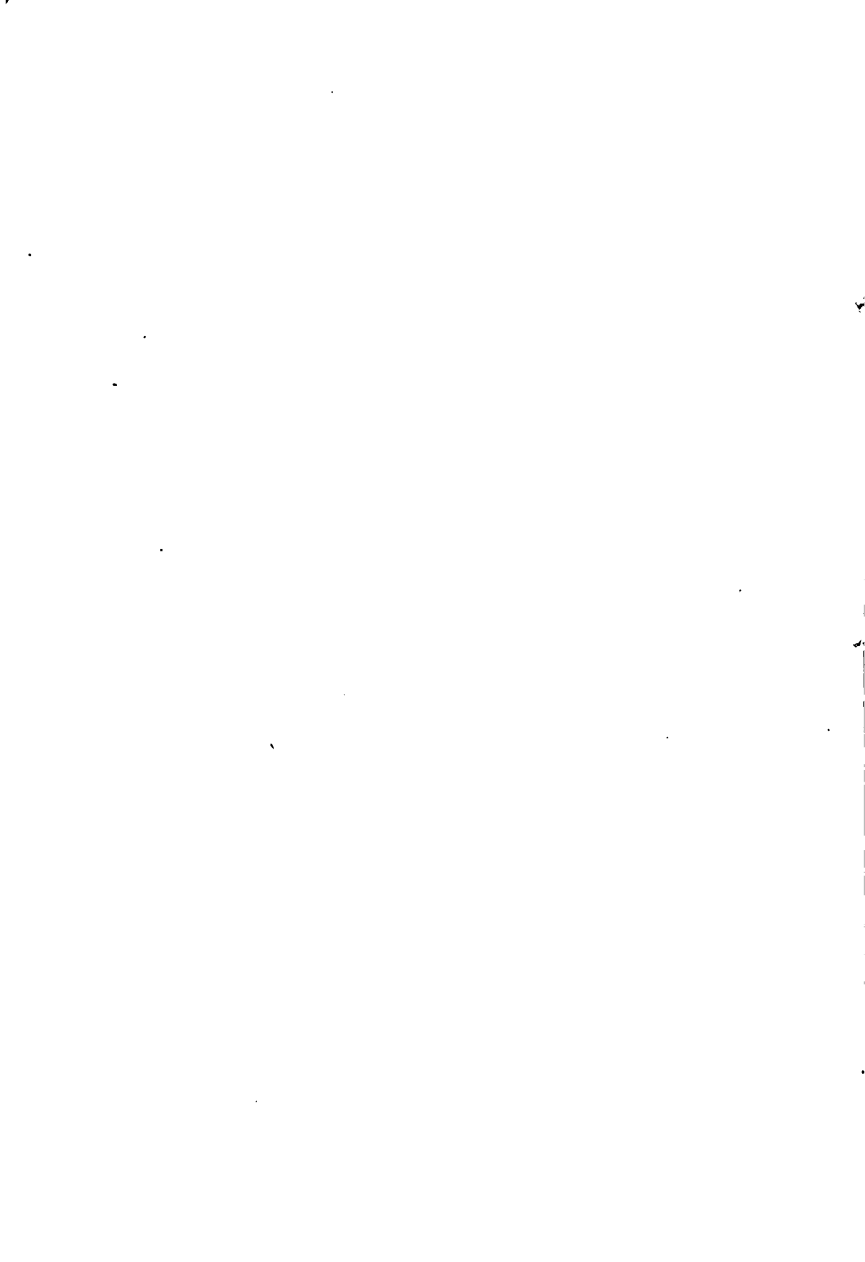
<sup>2</sup> Translated from the Italian.

acceptable counsel from Lieut.-Colonel Haldane, late 64th Regiment, in regard to the chapters on Infantry, and from the late Colonel Barrow, C.B., C.M.G., 19th Hussars, in regard to the chapters on Cavalry. Lieut.-Colonel Haldane, also, afforded valuable aid in the preparation of the tactical exercises.

The introduction of improved arms, the inevitable march of tactical ideas, and numerous consequent changes in our drill books, have necessitated a complete revision of the present, or seventh, edition. Two new chapters, and several new plates, have been added, and it is confidently hoped that the book will be now found to be quite up to date as a manual of modern tactics, in all important particulars. During the revision every assistance and facility has been given to the author by the War Office authorities, more especially by the officers who are charged with the Correction and Editing of the Cavalry and Infantry Drill-books.

WILKINSON J. SHAW,  
Lieutenant-Colonel.

ALDERSHOT ARMY COLLEGE :  
*December 31, 1889.*



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# THE ELEMENTS OF MODERN TACTICS.

## CHAPTER I.

### INTRODUCTORY.

#### THE STUDY OF TACTICS.

BEFORE commencing to study the principles of modern tactics, it is necessary for an officer not only to learn and understand the details of his own arm of the service, but also to have a very fair acquaintance with the working of the sister arms. The object of the early chapters of this manual is to proffer that knowledge in a concise and simple form to officers of each arm, rather than to teach them what they already know of the duties of their own branch. In the later chapters the elementary principles which guide the movements of a small combined force are shown, in order to afford the student an insight into the art of commanding a detachment of the three arms when acting against an enemy.

The method pursued of working out exercises or studies on each portion of the subject discussed is one which has commended itself to all military students. The exercises should be at first of an elementary character and may be executed entirely indoors, but no instruction in tactics can be considered complete until the student has had opportunities of working out similar exercises practically on the ground, with or without the help of troops as the case may be. If it can be so arranged that the theoretical and the practical instruction go hand in hand, and are able to be worked in one with the other, the benefit to be derived will be so much the greater. If this cannot be done, the ele-

mentary theory must in all cases precede the practical instruction. Afterwards, theoretical study of the subjects practically taught by means of exercises in the field, must not be neglected by the student.

As in modern warfare independent leaders, whether officers or of lower grade, are required in greater numbers than formerly, it is certain that some method for their effectual training must be instituted. No better system can be devised than that of exercising the student in schemes or studies, based each upon a possible situation or *Idea*, wherein he may be forced to make up his mind as to a course of action under given conditions. Having to carry out his designs as well as to form them, he will thus learn early as a commander, not only what to do, but how to do it. Such exercises should be supplemented by others out of doors, in which the student can become accustomed to hostile action, by one party being pitted against another in small manœuvres.

This mode of instruction has in principle been advocated by many modern writers.\* Whether the exercises are indoors or out of doors, they should always be progressive, and the student should not be allowed to handle the arms in combination until he thoroughly understands the employment and mode of application of one arm by itself, in all the minor operations of war.

As regards the theoretical portion of his studies, the student in tactics is recommended, so soon as he has thoroughly mastered the elements of the art as given in the text of this manual, to work out on the 6-inch map in full detail all the exercises shown in the small plates, using blocks for troops, such as the men belonging to the *Kriegsspiel* if available, or substitutes cut out in cardboard as suggested in the directions printed on the map. The student should subsequently vary these exercises for himself by slightly altering the conditions of each; by such means he can work out an entirely new set of situations, referring for principles, when at fault, to the text of the manual.

Having derived as much benefit as possible from these

\* Von Verdy du Vernois, Von Scherff, and many others.

exercises, the student will find that he is able to take an entirely new interest in all tactical questions, and that he can now for instance understand the movements executed at a game of Kriegsspiel and criticise them with fair judgment in a manner impossible a short time before.

#### SOME USEFUL DEFINITIONS.

As a preliminary exercise in the study of the elements of tactics, the student should examine himself to ascertain if he knows the meaning of the various conventional military expressions, which he must constantly make use of and understand.

*Tactics*, as distinguished from *Strategy*, means the art of handling troops in the presence or in the immediate neighbourhood of an enemy. *Strategy* is the art of conducting the greater operations of war, by movements that take place out of sight of, or at a distance from, an enemy. In the study of either of these sciences, however, other details, incidental to the conduct of all operations in the field, whether large or small, must be considered, in addition to those strictly involved in the handling or movements of troops.

*Tactical unit* is an expression denoting the body of troops of each arm, considered most suitable for one man's independent command. It affords a convenient mode of calculating forces in the field, by the number of tactical units of each arm present; thus we speak of so many battalions, so many squadrons, and so many batteries, as constituting the strength of a force.

A *group* of men whether of infantry or cavalry may be formed of any number from two upwards until it arrives at the strength of a recognised sub-unit, such for instance as a section of infantry.

A *vedette* is a cavalry mounted sentry posted in a fixed position where a continual look-out is necessary. The term is properly restricted to mounted sentries posted by cavalry piquets.

A *scout* in cavalry is of two kinds, being employed either for the sole purpose of examining ground over which a body of

troops is to pass, when he is called a ground scout, or else being detached for ordinary reconnoitring purposes from a patrol or reconnoitring party, when he is called an advanced scout.

A scout in infantry is usually a marksman, sent out in advance of attacking troops, to reconnoitre, to endeavour to pick off the leaders of the enemy's advanced troops, and to select cover in advance for the firing line to move up to. The term is also applied to an ordinary reconnoitrer detached from a patrol.

*Frontage* is the extent of ground occupied by the front rank of a body of troops in whatever formation they may be.

*Interval* is the lateral space between men or bodies of troops in frontage.

*Distance* is the space between men or bodies of troops from front to rear.

*Depth* is the space taken up by a body of troops from front to rear.

*Column of route* is a formation for moving on a road with a narrow front, when on the line of march. In cavalry the term is more particularly applied to columns having no broader front than that presented by a column of sections, i.e. four men abreast. In infantry the formation is usually that of fours. In artillery the front is invariably that of one carriage only, the guns and wagons of each subdivision succeeding one another.

*Field column of route* in artillery means that the wagons are detached, and follow in rear of the guns; only such carriages as are adapted to accompany guns over any country are to follow. Spare carriages go with another part of the column.

#### ON MARCHING BY AID OF THE SUN OR STARS.

Before proceeding further a few remarks may be made, on a method by which an officer or soldier in the field may practically accustom himself to observe the relative positions of places, and the direction of routes, with reference to the cardinal and other points of the horizon.

The four principal or cardinal points, North, South, East,

and West, and their intermediate points, North-east, North-west, South-east, South-west, will be found generally sufficient for all military purposes of observation or description. When the 'bearing' of an object is mentioned, it means the situation of the object estimated from a fixed point of observation with reference to these points of the horizon. Thus an observer facing north, raising his right arm stiffly till in a line with the shoulder, and finding his hand pointing to a tower, might say that the bearing of the tower was due east.

The points of the horizon can be most correctly obtained by reference to a magnetic compass, which, for all purposes of correcting or finding positions or of following routes, will be found extremely useful on field service. The most simple form of compass will serve as well as a more elaborate instrument; but due attention should be paid to its preservation, and the precaution of keeping it clear from the attraction of iron when taking observations should above all never be neglected.\*

A magnetic compass may not, however, be ready at hand in the field, or the one in use may get out of order. The officer or soldier on detached service should therefore be able to do without one, and correct his position or find his road, in the daytime by aid of the sun, and at night by help of the stars.

In northern latitudes the sun appears due south when passing the meridian of the place at noon; and consequently a man's shadow, or the shadow of a stick, bayonet, or sword, placed vertically in the ground, would point due north at that hour. If a watch, or the chime of a neighbouring church clock, is not available to fix the hour, the observer must learn to estimate midday by the height of the sun in the heavens, taking into account the time of year. This is less difficult than may be supposed, seeing that it is habitually practised with much accuracy by the outdoor populations of all countries.

The observer placing himself with his back to the sun at

\* The mode of using a magnetic compass is explained in the first volume of this series.



noon will find his shadow pointing due north, the south being therefore directly to his rear, the east on his right hand, and the west on his left hand. The cardinal points are thus most accurately obtained at noon. They can also be taken with a certain correctness, sufficient for most practical purposes, during some hours before and after midday, by noting the position attained by the sun in his apparent course. The sun rises approximately in the east, and in northern latitudes appears to move thence to south-east, where he may be looked for at or about three hours before noon. From south, where he is at noon, he moves to south-west, which he reaches some three hours after noon. The sun's point of setting is always towards the west.\*

The sun's course immediately before and after noon may be roughly measured on the horizontal plane of the ground by giving it an angular speed of  $15^{\circ}$  per hour. Thus the shadow of a stick at 11 A. M. would point in a direction not far from  $15^{\circ}$  to the left of true north. An angle of  $15^{\circ}$  can be quickly laid out on the ground, by first marking a right angle by the eye, and then dividing half of it into three parts, one of which will give the required angle. A line drawn on the ground away from the stick, and making an angle of  $15^{\circ}$  with the shadow, to its right, will hence point nearly due north.

In southern latitudes † the sun appears due north at noon ;

\* The observation of a north and south line at noon is the only one requiring no calculation, and reliable without regard to place or time of year. The exact position of the sun at each hour of time before or after midday not only varies with the season of the year, but with the place of observation. Some local instruction would therefore be necessary to show how to find the points of the compass by the sun's aid at other hours than noon.\* In England the sun may be taken at south-east at 9 A.M. during the six winter months without much error, but this would not be accurate during the six summer months, more especially near midsummer.

† To meet possible criticism, the writer must explain that in speaking of southern or northern latitudes he refers broadly to such as are south or north of the tropics. Within the tropics the sun at noon appears due north or due south according to the time of year, and twice in the year it is vertical at noon, about which times no observation could be taken. With care a north and south meridian line could be laid down at all

thus an observer at the Cape of Good Hope would find the shadow of a vertical stick at midday pointing due south. The sun's apparent course is from east to north-east, thence to north, which he reaches at noon. From north he moves to north-west, and disappears towards west at sunset.

A very simple form of sun compass may here be described which might be useful in the field. It could be made in ten minutes with the aid of a piece of cardboard and a common brass pin, and would help to indicate the position of the observer at or about midday, or to fix the direction of his march, with quite sufficient accuracy. The possession and use of such a compass card would often induce new habits of thought and observation in the soldier, and tend to develop his sense of locality. To make the compass, which is shown in Fig. 1, Plate I., a circle about the size of a large watch should be drawn on a piece of strong cardboard, which should then be trimmed round with a knife or pair of scissors till about the eighth of an inch of cardboard is left outside the circle. Two diameters, at right angles, are then drawn, to represent a north and south line, and an east and west line, the letters N, S, E, W, being printed outside the points where the diameters meet the circle. The circle is thus divided into four quadrants, each of which should be again divided into equal parts by two other diameters being drawn at right angles to each other, to meet the circle at the points marked NW, NE, SW, and SE.

The portions of the circumference of the circle, S, SE, and S, SW, may be again subdivided into three parts, each of which has an angular value of  $15^{\circ}$ , being the sixth part of the quadrant.

To use the compass the card should be held horizontally, and, noon being taken from a watch or other source of information, a common brass pin is stuck upright into the card at S. The card is then turned so that the point S is towards the sun and the shadow of the pin falls across the centre of the circle in the direction of N. The letters showing the other seasons by means of a suspended plumb line, or a stick accurately adjusted to the vertical.

cardinal and other points now indicate their true local bearings, and objects in the landscape or on the horizon must be noted by which they can be remembered. A single observer can best effect this if he places the card on the ground, so that the shadow of the pin passing through the centre of the circle points north. He should then stand on the opposite side of the compass from the points to be observed, while selecting convenient landmarks.

Should the observation be taken a little before or after midday the pin must be fixed into the card at a point on the circle east or west of the letter S, the shadow, as before, being made to fall across the centre of the circle. The true north will be now in the direction to which the north line of the compass card points. The accuracy of this method, however, cannot (without local correction) be relied upon for more than an hour before and an hour after noon.

For southern latitudes the pin would be inserted in the card at N and the operation of using the compass would be the reverse of the above, with similar results of indicating the true bearings of the points of the horizon.

The principles inculcated by the use of some such appliance would often, even in its absence, enable the leader of a party in a strange country, to advance without a guide in a given direction. Suppose him serving in Turkey and that he is directed to start at sunrise and march due north. In this case, if without compass of any kind, he can still direct his march, by first keeping the sun on his right side and then letting it gradually and slowly get more and more to his rear, till by its height in the heavens he judges it to be noon. Now for a time he must follow the direction of his shadow, and then gradually let the sun get more to his left and less behind him, till the approach of sunset, when his shadow rapidly lengthening should be cast to his right side.

At night the direction must be taken by the stars. In the northern hemisphere this is comparatively easy, as the pole star will give the true north with sufficient accuracy. In order to mark therefrom the local bearing of the principal points of the horizon, some landmark which appears to be

vertically under the pole star should be looked for and noted. The observer standing facing this landmark will then have the south directly in his rear, the east on his right hand, and the west on his left hand. The pole star itself can always be found by looking for the Great Bear constellation, two end stars of which, called the pointers, are in the same line, or nearly so, with the pole star. It should be remembered that, like other fixed stars, those of the Great Bear revolve round the pole once in twenty-four hours, so that the position of the constellation in the heavens will not appear the same to the spectator at all hours of the night.\* At all times, however, an imaginary line drawn from one pointer to the other and produced to about six times its length, indicates very nearly the position of the pole star.

The compass card already alluded to may at night be used as a star compass. The pin in this case would be placed at N and a shorter pin at S. The card should be held horizontally as before, but up to the level of the eye, until the heads of the short and long pins are brought into line with the pole star. The intersection of the foot of the long pin at N with the horizon would represent the direction of the true north.

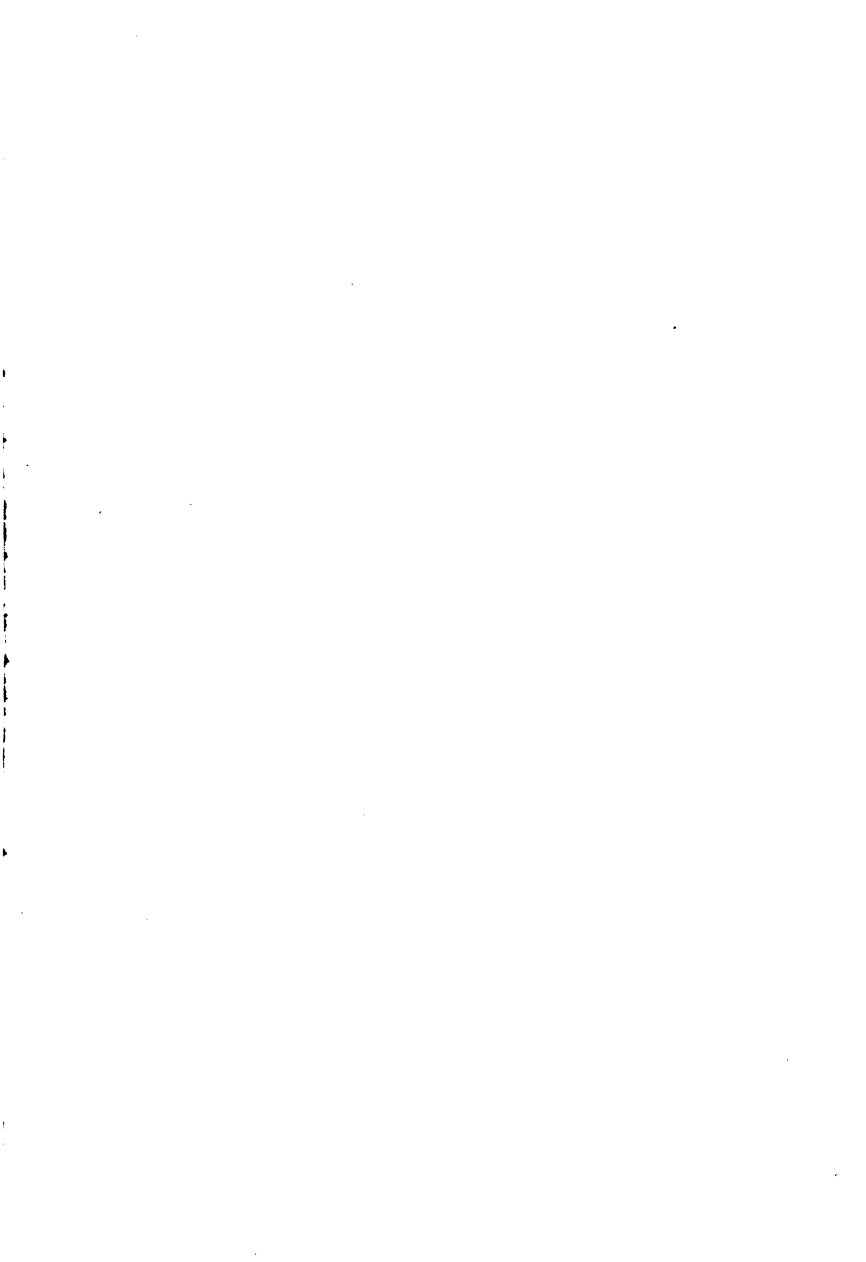
#### HINTS ON MAP READING.

All officers and non-commissioned officers in the present day should understand the use of maps, and be able to read them without difficulty. The student will find that comparing a map with the ground which it represents is an excellent plan for attaining proficiency in this art. The map for a preliminary exercise should be of fairly large scale, a convenient one being that of six inches to the mile if it can be procured. The student should not, however, be satisfied until he can also read the smaller scales. Having selected some starting point on the ground, easily found on his map, such as four cross roads or

\* Neither will the Great Bear appear in the same position at the same hour on different nights. Thus in the latitudes of the British Isles he is nearly overhead at ten o'clock at night early in April; but at the same hour of the night towards the beginning of October he is seen due north, and not much above the horizon.

a village green, he should walk along a main road, holding the map as the ground lies, or in other words with its northern portion towards the direction so far as known of the true north. A pocket or prismatic compass would of course much assist him in accurately finding the north ; but it may be fixed sufficiently closely as above shown by the watch and position of the sun, or even by turning and adjusting the map until two or more prominent objects marked thereon and within sight of the observer come into their proper relative positions on the paper. At every lateral or cross road the angle at which it intersects or runs into the main route should be roughly estimated, and the map compared to see if it looks the same on paper. A few distances may first be judged, then paced, and then measured on the map according to the scale. Any marked features of ground in the vicinity, especially those valuable from a military point of view, should now be examined and compared with the map. The student will thus soon become habituated to the necessarily technical manner in which ground and details of occupation are depicted on paper. The conventional signs employed, most of which are used in maps intended for civil as well as military purposes, with a few additional ones for the latter alone, should of course be carefully learnt and understood. After some practice with a six-inch map the student should use the one-inch Ordnance map, which is sufficiently detailed for nearly all practical requirements in the field. He should not consider himself perfect until he can rely upon being able to find his position quickly on the map at any part of the ground upon which he may happen to be, and until he can pick out his route from one place to another along strange roads by aid of his map alone.

In order to complete his acquaintance with maps and derive full use from them, an officer should be able to prick off distances thereon with a certain amount of accuracy. The direct distance or range from one point to another would of course be taken as the crow flies, and the length by scale of a line joining the two points would give it ; but more often it is required to know the distance by a road which winds





and curves along its whole or a greater part of its length. There are several more or less ingenious instruments for taking such measurements on a map, which depend on the revolution of a wheel. They are all scientific toys and are not to be depended upon in the field, where if they get out of order or are broken they cannot be replaced. A pair of ordinary compasses or dividers is the only reliable instrument. Should these be lost or broken, any ingenious man can replace them with two pieces of hard wood about six inches long, shaped out with a knife, and joined together at the head, so as to open and shut stiffly, by a common steel screw taken out of a packing-case; the extreme points being supplied if thought fit by two large housewife needles driven for half their lengths up the ends of the legs of the dividers.

For the purpose of illustrating the mode of using the dividers we will assume that it is required to measure the exact distance by road on a one-inch map, from a farm house to a village apparently some four or five miles off as the crow flies.

We perceive that the road as shown on the map goes at first for a short distance, of about half an inch, nearly straight from the farm house to a bridge. We accordingly place the point of one leg, which we will call the near leg, of the dividers, at the farm house, and, allowing the weight of the compasses to bear lightly thereon, we push out the other, which we will call the far leg, till the point rests on the bridge. Here the road after crossing the river turns sharply to the left along the bank, and the weight of the compasses being transferred to the far leg, upon the point of which they revolve round to the right, the near leg is brought down again to the paper in the line of the new direction of the road *produced backwards*. The weight is now shifted to the near leg, and the far leg is pushed gently forward so far as the road goes straight, or until there is a pronounced change, this time to the right, in its general direction. Here the point of the far leg is dropped and receives again the weight of the compasses, the near leg being traversed round to the left until in prolongation of the new direction produced backwards, when



the near point is rested on the paper while the far one is pushed forward to the most distant point upon the road to which a straight line measurement can be taken. This movement being repeated until the village is reached, the angle to which the compasses are already opened will be slightly increased each time. The distance between the points of the pair of dividers is now measured by application to a foot rule, or to the scale on the map, and found to show on the one, six and a quarter inches, or on the other, six and a quarter miles. The village is therefore that distance by road from the farm.

Should the road or other route to be measured in this fashion be of extent to exceed the possible span of the dividers, or the length of the scale shown on the map, it is a good expedient to draw a line in pencil along the length of the margin of the map and to mark thereon the whole measurement in portions of convenient lengths, the sum of which gives the desired distance as represented by a straight line. The dividers being adjusted to a suitable division, or number of divisions, of the scale, as a mile or 1,000 yards, can then be stepped along the line, the small remainder left at the end being separately taken and added to the distance thus obtained.

Some practice in the above will enable a surprising accuracy to be attained, with little trouble, in taking road measurements to scale from a map.

## CHAPTER II.

### FUNCTIONS OF THE THREE ARMS.

A FORCE in the field to be complete must consist of all the three arms. In order to comprehend clearly the tactical use of the three arms combined, we must first investigate their independent value, and discuss the general functions and characteristics of each arm separately.

#### INFANTRY.

##### CHARACTERISTICS OF INFANTRY.

The infantry soldier is armed with a breech-loading rifle, the aimed or directed fire of which, speaking generally, may be considered to come into play at 800 yards from the enemy. His long range, or unaimed fire, may also be recognised as having a special value, under certain conditions.

The bayonet, to be attached to the rifle, is his weapon for close quarters, but its use is comparatively rare in modern warfare.

Infantry is the only arm which can act independently, under all circumstances, whether in attack or defence, in motion or at rest.

The action of infantry is,

1. Fire-action ;
2. Shock-action ;
3. A combination of the two.

Of these, it may be accepted, as a principle, that fire-action in the present day is by far the most important. The material results of superior fire are moreover accompanied by a moral effect which helps to ensure success.

Hence every means should be taken—

1. To increase the effect of fire-action upon the enemy ;
2. To neutralise, so far as possible, the effect of fire-action on the part of the enemy.

The object of attack is, however, to destroy or capture the enemy, or at least to drive him from his position, and even superior fire-action is rarely alone sufficient for this

purpose. It may therefore be conceded that, for full completion of victory, the offensive fire-action of infantry requires to be supplemented or accompanied by shock-action at the right moment. Example : The final assault of a position, preceded by infantry fire during the advance.

The defensive fire-action of infantry in position, behind cover, may be maintained without much loss, and possibly demoralize or partly destroy the enemy ; but before the fullest success can result therefrom, the action must be changed into offensive fire and shock-action combined. This is called giving the counterstroke.

On the other hand, defensive fire-action may, under some circumstances, be the only one permitted. Example : Infantry acting as support to artillery should rarely, if ever, leave their position to attack or pursue. Their function is almost purely defensive.

In modern warfare, it is not possible to advance, for the shock-action of infantry, in the close order of former days. Bodies of troops, above a certain strength, can no longer move, under hostile aimed fire, in other than dispersed order.

The First Line of attack must therefore be subdivided into a firing line in extended order, followed by its immediate supports, broken up into fractions more or less dense and more or less separated, according to the conditions of the case ; and backed up by a reserve kept as long as possible in small columns or in line, but liable to be opened out also if the weight of the enemy's fire is felt.

The duties of the First Line are to keep up a well-directed fire on the enemy, from the moment such fire becomes effective ; by a steady advance to establish itself as near the position as possible ; and thence to open such a heavy fire that the Second Line may be enabled to approach the point of attack for the purpose of the assault.

In order to effect this the firing line is progressively reinforced from the rear, during the latter part of the advance, first by its supports, and finally by its reserve, so that its full fire action is developed at the critical moment.

As the Second Line passes through it to assault, the First Line ceases its fire, and joins in the attack of the position.

The Third<sup>c</sup> Line, if there is one, follows and confirms the success.

But frequently where the attacking force possesses a superiority of fire, its moral effect, and that of an unwavering advance, render actual shock unnecessary. Example :—A position held and defended until the assailants come within 300 yards. The defenders, demoralized by superior fire and the resolute approach of a steadily advancing enemy, break and retire before the position is reached by the assailants.

In advancing to attack with a portion of the force extended, the supports and reserve of the First Line should assume small column formations, as they enter the outer zone of fire.\* The small column of medium breadth and depth is most favourable to forward movements in varied ground, and is capable, under many conditions, of being preserved to a late period in the advance. When the supporting line, however, begins to feel the effects of the enemy's fire, the columns must be changed into line, with open files if necessary. The reserve should be retained as long as possible in small columns, and, if the ground favours the movement, it may often be pushed up in such formation close to the point at which its action is required. The force is thus kept better in hand than if earlier dispersed, but in open ground under aimed fire none other than extended order, or line with intervals between files, can be long preserved.

#### TACTICAL UNIT OF INFANTRY.

The battalion is the tactical unit, its war establishment being as follows :

|   |       |
|---|-------|
| Officers . . . . .                          | 30    |
| Warrant Officers, N.C.O. and men† . . . . . | 1,066 |
| Officers and men . . . . .                  | 1,096 |
| Riding horses . . . . .                     | 9     |
| Draught and pack . . . . .                  | 61    |
| Horses . . . . .                            | 70    |

The field strength of the battalion is reduced to 1,000, by 2 officers and 94 men being left at the base of operations.

\* See page 36. † This includes thirty two privates as drivers.

The battalion is divided into 8 companies, the war establishment of one company being as follows :

|                               |            |
|-------------------------------|------------|
| Officers . . . . .            | 3          |
| Sergeants . . . . .           | 5          |
| Corporals . . . . .           | 5          |
| Drummers or Buglers . . . . . | 2          |
| Privates . . . . .            | 108        |
| Driver . . . . .              | 1          |
| Officers and men . . . . .    | <u>124</u> |

Allowing a fair margin for casualties, the company made up to this strength may be taken at 50 files or 100 rank and file for all purposes of calculation. Whatever may be its strength, the company will probably be the fighting unit in all future wars. In dispersed order the battalion can no longer be directly commanded by one man. Hence the necessity for a certain amount of independent command of smaller units. The battalion will, however, remain as it were the centre of action. The general direction of operations will come from the commander of the battalion, which will therefore not cease to be the tactical unit.

The company is divided into two half companies and four sections. The captain commands the company, the senior subaltern the right half company, the junior subaltern the left half company. Four senior sergeants act as guides and markers. The guides are posted on each flank of the company at all times, except in firings, when they command the outer sections from the rear. The markers in firings command the inner sections. In line, companies are numbered from right to left; in column, from front to rear.

#### BRIGADE OF INFANTRY.

The war establishment of a brigade of infantry is as follows :—

Four battalions, each with a field strength of 1,000.

Two machine guns.

Departmental troops (supply, transport, and medical).

Strength 4,347 of all ranks.

## DIVISION OF INFANTRY.

The war establishment of a division of infantry is as follows :

Two brigades of infantry as given.

One squadron of cavalry.

Three batteries of field artillery.

One company of engineers.

Ammunition column, and departments.

Strength 10,059 of all ranks.

CALCULATION OF TIME AND SPACE OCCUPIED BY INFANTRY  
IN MARCHES OR FORMATIONS.

As an early exercise the student should practise calculating both the time and space required in marches or formations by each arm, or by all arms of the service in combination. In doing so the conventional terms which are ordinarily employed must be clearly understood from the commencement. These terms are Frontage, Interval, Distance, and Depth. Their definitions are given in the first chapter, page 4, and care should be taken that they are not confounded one with the other. It should be noted that frontage includes intervals. For instance, the frontage of two battalions in line would include the interval between one battalion and the other. Depth, on the other hand, includes distances. For instance, the depth of a battalion in column would be measured from the front of the leading front rank to the rear of the extreme rear rank of the column, and would include the distances between one company and another, which are taken from the heels of the front rank of one company to the heels of the front rank of the next company.

By recently introduced regulations a difference is made between the frontage or depth allowed to infantry at *drill*, and that which is to be observed when *manceuvring* ; both methods are here given.

*Frontage of infantry at drill.*—The frontage required for a battalion in line is thus found :

Each man or file is allowed at drill, or at inspection parades, a frontage of two feet, therefore the number of men in line drawn up two deep will give the number of feet required for the front rank. Add two feet for each of the company guides, and six feet for the colour party. The result is the total frontage in feet, which, divided by 3, gives the frontage in yards of a battalion in line.

**EXAMPLE.**

|                                  | Feet                 |
|----------------------------------|----------------------|
| 8 companies of 100 men . . . . . | $100 \times 8 = 800$ |
| 16 guides . . . . .              | $16 \times 2 = 32$   |
| Colour party . . . . .           | $3 \times 2 = 6$     |
| Total . . . . .                  | <u>838</u>           |

Say 279 yards.

The frontage in paces may be found by multiplying the number of files by 8 and dividing by 10, thus :

|                                   | Files      |
|-----------------------------------|------------|
| 8 companies of 50 files . . . . . | $= 400$    |
| 16 guides . . . . .               | $= 16$     |
| Colour party . . . . .            | $= 3$      |
| Total . . . . .                   | <u>419</u> |

$419 \times 8 = 3,352$ , and cutting off the last figure (a sufficiently accurate division by 10) we obtain as result 335 paces, the frontage of the battalion in line.

In brigade, the frontage of battalions in line should include 25 yards' interval between every two battalions. When the nature of the ground requires it, this interval may be reduced to 10 yards.

A line of quarter columns would be formed with intervals of 25 yards, which may be increased, if desirable, to deploying intervals plus 25 yards.

*Depth of infantry at drill.*—The depth of a battalion in line, taking in the third or supernumerary rank, may be considered as 3 yards.

The captains are in line, a pace in rear of the third rank, i.e. the lieutenants, markers, drummers, and pioneers.

The depth of a column of fours is equal to the frontage in line.

The depth of a column of companies is equal to the frontage in line, minus the frontage of the leading company, plus the depth of the rear company ; thus in the example already taken the depth of the battalion in column would be

$$279 - 35 + 3 = 247 \text{ yards.}$$

The depth of quarter column equals five times the number of companies, minus two yards ; thus the same battalion in quarter column would require

$$8 \times 5 - 2 = 38 \text{ yards.}$$

In brigade, the distance between every two battalions in column equals the frontage of their leading companies, plus 25 yards, in order to preserve intervals on wheeling into line.

With the above figures, which are useful for comparison with those employed during manœuvre for similar calculations, we can dismiss the question of space occupied at drill ; all calculations which follow in this book being based on the supposition that the troops are engaged in field manœuvres, and in possible or actual contact with an enemy.

*Frontage of infantry in manœuvre.*—Having regard to the additional equipment and ammunition carried by troops when manœuvring, and to the extent and variety of the ground to be traversed, each file or man in rank entire is allowed a frontage equal to a pace of 30 inches. Thus, in order to calculate the frontage of a battalion in line during manœuvre, it is necessary to take the number of files as representing paces, and to add two paces per company for guides, and also three paces for the colour party. The result gives the number of paces taken up by the front rank. If the answer is required in yards, paces are converted to yards by multiplying the former by 5, and dividing by 6 (the pace being 30 ins. and the yard 36 ins.) thus :

$$30 \text{ paces} \times 5 \div 6 = \frac{150}{6} = 25 \text{ yards ;}$$

$$\text{or conversely : } 25 \text{ yards} \times 6 \div 5 = \frac{150}{5} = 30 \text{ paces.}$$



## EXAMPLE.

|                                  | Files |
|----------------------------------|-------|
| 8 companies of 100 men . . . . . | 400   |
| 16 guides . . . . .              | 16    |
| Colour party . . . . .           | 3     |
| Total . . . . .                  | 419   |

419 paces ; or  $419 \times 5 \div 6 = 349\frac{1}{2}$  yards. This gives the frontage in line of a battalion of 800 men in manœuvre.

During manœuvre an infantry battalion will frequently require to be moved in column, quarter column, or in half battalion quarter columns. The frontage of column and quarter column is always the frontage of the leading company. The frontage in half battalion quarter columns is the frontage of the two leading companies, and of such interval between them as may be ordered. When moving to the attack in this formation it is laid down that a convenient interval is the frontage of one company plus 6 paces ; in such case the total frontage of the battalion thus formed would be the frontage of three companies plus 6 paces.

*Depth of infantry in manœuvre.*—In closings, the formations of fours, &c., the side step and the covering pace are directed to be adjusted to suit the frontage of one pace allowed for each man.

The depth of a column of companies is calculated in the same way as at drill, due regard being had to the increased frontage in line of the battalion during manœuvre.

The depth of quarter column is the same in manœuvre as at drill, as it has no reference to the frontage in line of the battalion.

The depth of a column of fours is equal to the frontage in line taken up by the same force of infantry in manœuvre.

*Pace of infantry in manœuvre.*—The ordinary pace of infantry on the march during field operations may be taken at about three miles an hour, or 88 yards per minute, for tactical calculations. This rate of march must be looked upon as the tactical pace of infantry, and as such distinguished from the drill pace of 100 yards per minute laid down in the manual of infantry drill. The latter pace would

be, however, fully attained when advancing to attack before opening fire. In advancing after firing has commenced, but without seeking cover, the pace would be about 40 yards per minute. In advancing by rushes, taking advantage of cover, about 20 yards per minute. Through thick wood the advance would not exceed 40 yards per minute.

At the double the pace is increased to five miles an hour, for short intervals of not more than two minutes or so at a time. At this pace about 146 yards would be passed over in one minute.

From the foregoing data calculations may be made for infantry as follows :

1. The distance to be passed over being known, and the pace decided, the time required for a movement can be calculated.

2. The strength of a column or party of the enemy's infantry may be approximately estimated, by noting the time occupied by the force in passing a fixed point, together with its pace and formation, sufficient deduction being made, when necessary, in the calculation, for opening out or straggling on the march.

EXAMPLE 1.—A company of infantry is ordered to arrive at a bridge, distance by road on the map 3 miles 540 yards, exactly at 9 A.M. A second company is to arrive simultaneously at a further bridge, distance on map 4 miles 350 yards. Pace ordinary. When should the companies start?

|   |     |    |
|---|-----|----|
| ANSWER.—1st company : 3 miles will take | hr. | m. |
|   | 1   | 0  |
| $\frac{540}{88}$ yards                  | 0   | 6  |

|                     |   |   |
|---------------------|---|---|
| Total time on march | 1 | 6 |
|---------------------|---|---|

Start at 6 minutes before 8 A.M.

|                                 |   |    |
|---------------------------------|---|----|
| 2nd company : 4 miles will take | 1 | 20 |
| $\frac{350}{88}$ yards          | 0 | 4  |

|                     |   |    |
|---------------------|---|----|
| Total time on march | 1 | 24 |
|---------------------|---|----|

Start at 24 minutes before 8 A.M.

No margin is here allowed for halts during the march, the distance to be traversed being short. When the march is long the estimated rate of progress should include short halts, and ought not then to be expected to exceed  $2\frac{3}{4}$  miles per hour under the ordinary conditions of field service. During peace manœuvres, however, and occasionally under favourable circumstances in the field, the pace of 3 miles per hour may be assumed to include short halts.\*

EXAMPLE 2.—A column of infantry in fours takes  $2\frac{1}{2}$  minutes to pass across an opening under observation. Pace ordinary. Calculate the strength of column.

ANSWER.—Distance passed over by rear of column, in moving up to observed point, gives length of column in yards; thus:

$$88 \times 2 + \frac{88}{2} = 176 + 44 = 220 \text{ yards.}$$

220 yards is therefore the actual length of the column, but the observer has reason to think a deduction must be made for opening out. Ten per cent. being accordingly subtracted, the depth of the column at correct distances is found to be 200 yards.

The length of a column of fours equals the frontage in line of the same number of men, and 200 yards, or its equivalent 240 paces, represents a force of 240 files or 480 men.

This gives the approximate strength of the column under observation.

In the calculation it will have been noted that infantry on the march in column of fours, occupy in manœuvre one pace per file of road. This should be remembered as an easy

\* It must be understood that this and other elementary examples are only given as exhibiting in the simplest form the method of making more difficult calculations of a similar nature. In Example 1 the commander would hardly require in practice to work out the hours of starting with pencil and paper, nor in the supposed case would a minute or two one way or the other affect the result. The principle inculcated is, however, of much importance, and commanders should possess both the power and habit of making such calculations easily and correctly whenever they are required. The failure of tactical combinations is commonly caused by want of accuracy in such matters.

formula for ascertaining the numbers in a column ; the depth being known in paces, twice the number of paces gives the strength of the column.

#### CAVALRY.

##### CHARACTERISTICS OF CAVALRY.

The cavalry soldier is armed with a sword and a breech-loading carbine. Lancers are armed with a lance, in addition to the sword and carbine. The cavalry soldier mounted depends individually on the naked weapon, or *arme blanche* as it is called, for offence or defence. His firearm should not be used from the saddle, except for the purpose of signal. Dismounted cavalry can use their firearms effectually, but not in the sense of skirmishers as applied to infantry. They are principally employed on the defensive, to check an advance or to hold a post ; but when cavalry has pushed on to the front it may often by this means seize on a tactical point, and hold it until the infantry can come up.

The action of cavalry may be divided into

1. Shock-action ; in line.
2. Detached action ; either singly or in small parties.

To which we may add

3. Dismounted fire-action.

The leading principle of the action of cavalry in battle consists in attack. Even for purposes of defence it must advance to attack, as at the halt it is comparatively defenceless. Cavalry must therefore keep out of fire, until it can itself attack. The shock-action of cavalry to be efficacious should be applied at the right moment, and the charge should then be as impetuous as possible. The main conditions for success are rapidity and surprise in the advance, vigour and momentum in the shock. A combination of mobility and velocity, therefore, gives the greatest tactical value to cavalry on the field of battle. A powerful moral effect supplements the physical effect of the charge. After the charge, cavalry should either pursue the enemy or rally as quickly as possible, according to circumstances.

In covering the retreat of an army, especially its retirement from a lost field of battle, cavalry is of great value. It must here continue to act vigorously on the offensive, as the best means of defence both for itself and for the other arms ; operating under every disadvantage of time and place, and often at the risk of total destruction, in order to fulfil its special duty.

Cavalry should always manœuvre in column. The particular formation depends much on the ground ; but small columns are the most mobile and flexible, and present a less compact object to artillery fire. They can readily turn obstacles and obtain shelter of ground.

Cavalry fights in line, or rather in a succession or echelon of lines. Marmont says, 'A column of cavalry surrounded is quickly destroyed.' In all cavalry attack a proportion of the force should be kept as a reserve. It has been said that 'victory will remain with the side that can produce the last reserves.' The reserve follows in rear, to a flank or flanks ; and its duties are, to protect the retreat if the charge is unsuccessful, or to complete the victory if successful. Every attacking body also of any strength should protect its flanks, or at all events the exposed flank, by echelons, during its advance. It is, finally, of high importance that, in all cases, ground over which cavalry is to act should be reconnoitred by ground scouts thrown out to the front and flanks, so that the advance may not be checked by marshy ground, dykes, or other unforeseen obstacles.

The weak points of cavalry are its flanks ; consequently cavalry should be attacked by cavalry if possible on a flank, and when in the act of deploying. Under such circumstances, necessarily those of surprise, a small body may attack a large one with every chance of success.

Infantry should be attacked by cavalry, in flank, when in motion, when demoralized or broken by artillery fire, or be surprised.

Artillery should if possible be attacked in motion, or when limbering or unlimbering.

Artillery in position should only be attacked in flank or

in rear ; the escort in such case, if there is one, must be simultaneously charged by a portion of the force.

But the main use of cavalry in the present day is undoubtedly in its detached action, which includes all reconnoitring, screening, escort, and messenger duties. The service of watching, feeling, and hanging on to the enemy's troops is more than ever useful and important to an army in the field, and demoralizing to the enemy in its effects.

The value of the dismounted fire-action of cavalry in modern warfare is only beginning to be felt. It has, however, of late been pretty generally acknowledged, that cavalry must fight on foot under certain conditions, and that if it cannot do so, it fails to meet the requirements of the age. The dismounted action of cavalry has been employed with good results in the latest European campaign, by the Russians ; and in any future war its tactical importance, under various conditions, will probably be fully acknowledged.

#### TACTICAL UNIT OF CAVALRY.

The squadron of cavalry is the tactical unit.

In our service the regiment of cavalry consists of four squadrons.\*

The war establishment of a regiment is as follows :

|                                      |     |
|--------------------------------------|-----|
| Officers . . . . .                   | 32  |
| Warrant officers, N.C.O. and men . . | 634 |
| Officers and men . . . . .           | 666 |
| Chargers . . . . .                   | 89  |
| Troop horses . . . . .               | 456 |
| Draught horses . . . . .             | 69  |
| Horses . . . . .                     | 614 |

Of the officers and men here shown, 1 officer and 46 men remain at the base, and 35 men are drivers, so that the field strength is virtually reduced to 31 officers and 553 men.

\* The war establishment of a regiment of Household Cavalry is, however, three squadrons, consisting each of 156 mounted officers and men, or, including drivers and dismounted men, a total of 198 per squadron.

The war establishment of a squadron is as follows :

|                                 |     |
|---------------------------------|-----|
| Officers . . . . .              | 6   |
| Troop sergeant-majors . . . . . | 2   |
| Sergeants . . . . .             | 6   |
| Corporals . . . . .             | 8   |
| Artificers . . . . .            | 5   |
| Trumpeters . . . . .            | 2   |
| Privates . . . . .              | 108 |
| Drivers . . . . .               | 7   |
| Officers and men . . . . .      | 144 |
| Chargers . . . . .              | 18  |
| Troop horses . . . . .          | 112 |
| Draught horses . . . . .        | 14  |
| Horses . . . . .                | 144 |

Deducting the troop horses required to mount the sergeant-majors, sergeants, artificers, and trumpeters, and allowing a margin for casualties, the squadron with the above establishment may be taken at 48 files, or 96 horses, for all purposes of calculation.

A squadron consists of two troops, the senior of the two captains on parade becoming the squadron leader. Squadrons number from the right in line and from the front in column. The troops of a squadron are 'right' and 'left' in line, and 'leading' and 'rear' in column of troops. Troops are divided into squads for administrative, not for tactical purposes.\*

#### BRIGADE OF CAVALRY.

The war establishment of a brigade of cavalry is as follows :

Three regiments, of four squadrons each ; or twelve squadrons.

Two machine guns.

Departmental troops (supply, transport, and medical).

Strength, 2,281 of all ranks.

\* A change will be shortly made by which the squadron in our service will be divided into three, or four, divisions (field troops), each consisting of 16 or of 12 files.

## FRONTAGE AND DEPTH OF CAVALRY.

*Frontage.*—The extent of front of a body of cavalry is as many yards as it contains files ; but in calculating the frontage of more than one squadron in line, an interval of twelve yards must be allowed between every two squadrons.

In column of fours—*i.e.* 8 men abreast, four front rank men and four rear rank men—the bare frontage is a little over 9 yards, being 1 yard for each man and half a horse's length of interval between the front and rear rank men ; but allowing for the troop leaders on the directing flank and the serrefiles on the outer flank, about 12 yards should be considered the least interval through which a column of fours could pass.

In column of sections, *i.e.* 4 men abreast, the bare frontage is 4 yards, but at least 6 yards must be allowed.

Similarly in column of half-sections, *i.e.* 2 men abreast, the bare frontage is 2 yards, but 4 yards must be allowed.

In brigade the intervals between regiments or brigades of cavalry, either in line or in line of columns, is 24 yards, with an addition for band and staff if required.

This interval must be included in all calculations of frontage.

*Depth.*—A horse's length is a term of measurement used in calculating depths, and equals 8 feet.

The ordinary distance between croup of front rank horse and head of rear rank horse, at close order, is one horse's length.\* The same distance is allowed between front rank and troop leaders, and between rear rank and serrefiles. Hence the depth of a squadron in line, troop leaders and serrefiles included, is  $8 \times 7 = 56$  feet, say 19 yards.

The squadron leader is a horse's length in advance of the troop leaders, which would make, if he is included in the

\* A change is in contemplation by which the distance between ranks, leaders, and serrefiles will be reduced to 6 feet. As the latest published cavalry regulations, however (1887), still hold good, the distance therein laid down of 8 feet is continued to be assumed in these pages.



calculation, a depth of  $8 \times 9 = 72$  feet, or 24 yards, necessary for the squadron in line.

In open column the depth equals the frontage in line, less the frontage of the leading body, plus the depth of the rear body.

In quarter column (which is only applied to squadrons, not troops), three horses' lengths are allowed between rear rank and front rank of successive squadrons.

Hence the depth is six horses' lengths per squadron, plus one horse's length for serrefiles of rear squadron.\* For 4 squadrons this would be :

$$6 \times 4 + 1 = 25 \text{ horses' lengths} = \frac{25 \times 8}{3} = 67 \text{ yards.}$$

In close column (which usually signifies squadrons unless troops are specified), one horse's length alone is allowed between rear rank and front rank of successive squadrons. Hence the depth is four horses' lengths, per squadron, plus one horse's length extra for the line of farriers and trumpeters. For 4 squadrons this would be :

$$4 \times 4 + 1 = 17 \text{ horses' lengths} = \frac{17 \times 8}{3} = 46 \text{ yards.}$$

In column of fours, the length of the column is the same as the extent of front in line. The distances between squadrons are also the same as the intervals in line, viz., twelve yards. The distance between horse and horse, head to group, is half a horse's length.

In column of sections, the length of the column is double the frontage in line, less the squadron intervals, of the same force; the distances between horses, and also between squadrons, in this formation, being half a horse's length.

In column of half-sections, the length of column is four

\* This calculation appears to have puzzled some non-cavalry readers. If a rough diagram be drawn it will be seen, that the six lengths from front to rear for each squadron must be counted from the troop leaders ut in front of leading squadron, and that seven lengths are required for the rear squadron to include the serrefile rank.

times the frontage in line, less the squadron intervals, of the same force ; the distances between horses, and also between squadrons, in this formation, being half a horse's length.

#### PACE OF CAVALRY.

The rate of walk is 4 miles an hour, or 117 yards in a minute.

The rate of trot is 8 miles an hour, or 235 yards in a minute. As a general rule the trot should not be kept up for more than two or three miles at a time.

The pace of cavalry on the march, alternately trotting and walking, may be taken at 5 miles an hour, or 146 yards in a minute.

The rate of gallop is 12 miles an hour, or 352 yards in a minute. The pace of an orderly or messenger, on service, may be taken at this rate for a mile ; beyond that distance, alternately galloping and trotting, at 10 miles an hour, or 293 yards in a minute.

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From the above data the following calculations may be made for cavalry :

1st. The distance to be passed over being known, and the pace decided, the time required for a movement can be calculated.

2nd. The strength of a force of cavalry may be approximately estimated, by noting the time it occupies in passing a fixed point, together with its pace and formation, sufficient deduction being made, when necessary, in the calculation, for opening out or straggling on the march.

**EXAMPLE 1.**—Two squadrons of cavalry at A, are ordered to rendezvous at B, at a certain hour the following morning, proceeding by different routes. The route for the 1st squadron, pricked off on map, is 6 miles 730 yards. The route for 2nd squadron is 8 miles 1,600 yards. What hours of departure will enable the squadrons to arrive simultaneously at B, at the time ordered ?

ANSWER :

|   | hrs. m.    |
|---|------------|
| At 5 miles an hour the first squadron             |            |
| would do 6 miles in . . . . .                     | 1 12       |
| To which add $\frac{730}{146}$ equal to . . . . . | 0 5        |
| Total . . . . .                                   | <hr/> 1 17 |

The squadron must therefore start 1 hour and 17 minutes before the time of rendezvous.

|   | hrs. m.    |
|---|------------|
| At 5 miles an hour the 2nd squadron                 |            |
| would do 8 miles in . . . . .                       | 1 36       |
| To which add $\frac{1,600}{146}$ equal to . . . . . | 0 11       |
| Total . . . . .                                     | <hr/> 1 47 |

The 2nd squadron must therefore start half an hour before the 1st squadron.

EXAMPLE 2.—A reconnoitring patrol visits a railway station and brings back the following reliable information :

‘Yesterday a large body of the enemy’s cavalry crossed the railway. A small party in advance examined the station and cut the telegraph wires. Then came the main body. The telegraph clerk timed it crossing the bridge ; three and a half minutes were occupied in filing over. The men were four or five abreast ; the horses were walking, not trotting, when they began to cross the bridge.’

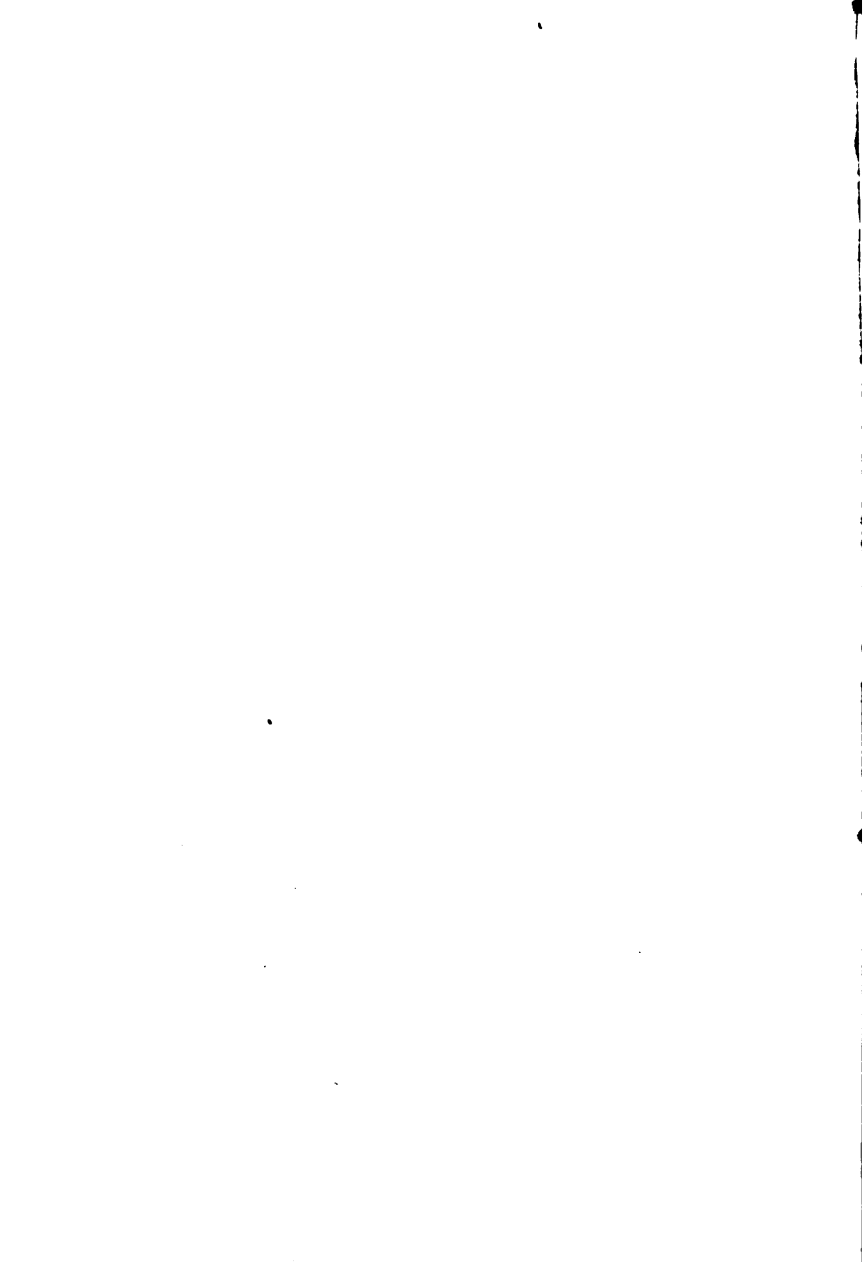
From these data calculate the force of cavalry.

ANSWER.—The formation was evidently that of sections, the pace a walk, the time occupied in passing a fixed point  $3\frac{1}{2}$  minutes ; hence the length of the column was

$$117 \times 3 + \frac{117}{2} = 351 + 58 = 409 \text{ yards.}$$

In order to calculate the strength of a column of sections from its depth, we must remember that each section is 8 + 4 feet, or 4 yards deep. As there are four horses in a section, each yard of depth corresponds to one horse. Consequently





409 yards of depth represents a force of over 400 horses, probably four strong squadrons of cavalry. Had they been in half sections, as each half section of two horses is four yards deep, every two yards of depth would correspond to one horse; 409 yards of depth would therefore indicate a force of over 200 horses, probably two strong squadrons of cavalry.

No deduction from the calculated depth of the column is here made for straggling, there having been a check at the bridge.

## EXERCISE I.

### TIME OCCUPIED IN THE MOVEMENT OF TROOPS.

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#### IDEA.\*

A STRONG reconnoitring party (Red), consisting of a half troop of cavalry supported by one and a half companies of infantry, is ordered to be sent out at daybreak from the Manor Farm, Redburn Hill, to report on supposed presence of the enemy (Blue), at or near Churton and Wiley Hilla.

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In this exercise the student should place himself in the position of the Commander of the reconnoitring party, whose duty it will be to make arrangements on the previous evening for the march and route of the troops detailed. The Commander finds that he must be at the Tarbor River by 6.30 A.M., in order to complete his reconnaissance on the further bank sufficiently early, and it appears to be desirable to occupy all the four bridges at the same time. He has therefore to calculate the time which it will take for each portion of his force to arrive at its post, directing the hours of departure to be in accordance therewith.

a. The half troop of cavalry is to move by the hollow road, north-west of Manor Farm, to the Common, thence to Farley Bridge. On crossing the stream it is to proceed to Chorley Farm, sending patrols along the high ground to the west. The route will then be along the road passing Cleveley Park gate to

\* When reading the Idea the student should refer to the small scale map of the surrounding country (given as a frontispiece, and also printed in the margin of the six-inch Minor War Game map), as well as to the special plate at the end of the Exercise.

Winsley Bridge. The party will halt when near the bridge, under cover of the copse south of Cleveley Park, and send on a patrol to the bridge.

The distance of this route pricked off on the map is 5,900 yards, from the Manor Farm to Winsley Bridge. Taking five miles an hour, alternate trot and walk, for the pace, which will give time for the scouting to the flanks to be effected, it will be found that  $\frac{5,900}{146}$  yards = 41 minutes. The cavalry must therefore start at 5.49 A.M., in order to arrive at Winsley Bridge at the appointed hour of 6.30 A.M.

b. Half a company of infantry is to move by the hollow road to Five Roads Cross, over Glenfield Bridge, passing west of the town, and skirting Cleveley Park fence, to Winsley Bridge, which it is to hold with one section. The other section is to be sent on by the river road to hold Totley Bridge. Both bridges are to be occupied by 6.30 A.M., the section at Winsley Bridge keeping well under cover, a little to the rear, until the hour named, when it will take up the best position for holding the bridge.

The distances in this case are found to be 4,450 yards to Winsley Bridge, and half a mile thence to Totley Bridge. As  $\frac{4,450}{88}$  yards = 51 minutes and  $\frac{880}{88}$  yards = 10 minutes, it follows that the half company must start 61 minutes before the appointed time, or at 5.29 A.M.

c. A section of infantry is to advance by Garrads Cross, and move up to the high ground by the road between Gorsham and Rainham Hills, then along the plateau and through Rainham Wood to Yatton Bridge, which is to be occupied at 6.30 A.M.

The distance here is found to be  $\frac{3,900}{88}$  yards = 45 minutes, so that the section must start at 5.45 A.M.

d. Another section of infantry is to advance by Hanley Farm, and the lower road between Windmill Hill and the East River, to Stanton Bridge, which is also to be occupied at 6.30 A.M.

The distance in this case is found to be  $\frac{4,000}{88}$  yards = 46 minutes, so that the section must start at 5.44 A.M.

e. The remaining half company of infantry is to be retained as a reserve. It will start as soon as the rest of the infantry has marched off, and advance at a moderate pace by Five Roads Cross and Glenfield Bridge Road.



## OBSERVATIONS.

The object of the arrangements here detailed, is a simultaneous occupation of the four bridges with infantry at a fixed hour, in order that the cavalry may then cross the river and complete the reconnaissance of the south bank, having its retreat safely secured at all points.

The student will perceive that the calculations thus simply made show the Commander, that half a company of his infantry should march at half-past 5 in the morning, while the remaining two sections of the advanced portion of the force need not leave till a quarter of an hour later. The cavalry party may start at about ten minutes to 6 A.M.

Plate II. shows the routes from Manor Farm to the river of each party, and their positions at 6.30 A.M.

## CHAPTER III.

FUNCTIONS OF THE THREE ARMS (*continued*).

## ARTILLERY.

## CHARACTERISTICS OF ARTILLERY.

FIELD-BATTERIES and horse-artillery batteries in our service are now ordered to be armed with a breech-loading rifled field-gun. Light field-batteries, and horse-artillery batteries have the 12-pounder B.L. gun. Heavy field-batteries still have the 16-pounder M.L. gun, but look for the issue of a new pattern 20-pounder B.L. gun before long.

The gun for mountain-batteries just adopted is a 15-pounder M.L. jointed gun of 3·3 inches calibre, weighing 422 lbs. Until the issue of this gun, however, the armament still consists of the last pattern, 2·5 inches M.L. jointed gun, of 400 lbs. weight.

Batteries of position hardly come under our consideration. They are armed with old-pattern 20-pounder and 40-pounder B.L. guns, as a rule.\*

The arm of artillery is the gun.

The carbine and short or long sword, with which a proportion of the men are provided, are merely intended for individual defence, or for guard and bivouac purposes.

The function of artillery in action is to prepare for and to support the attacks of infantry and cavalry, or to defend them when attacked, rather than to act independently, without their presence.

\* A large number of the M.L. 16-pounder guns have been issued to the Volunteers for similar purposes.

The action of artillery is confined to fire-action. Guns limbered-up, or in motion, are useless and of themselves defenceless for the time.

In order to understand the value of artillery fire and the principles which should regulate its application on the field of battle, it is necessary to consider in close connection the action and effect of infantry fire. The following table gives the approximate limits for the employment of each kind of fire, as officially recognised in late regulations :

| Zone | Description of fire                                | Limits                            | Range           |
|------|--|-----------------------------------|-----------------|
| 1st  | { Useful field-artillery<br>Limit of rifle . . . } | 3,000 to 1,700 yards              | Extreme         |
| 2nd  | Unaimed rifle . . .                                | 1,700 to 800 "                    | Long            |
| 3rd  | Aimed rifle . . .                                  | { 800 to 400 "<br>400 to position | Medium<br>Short |

It follows from this, that although the distances to which our field-guns can claim effective action extend much further than the limit here given, their extreme useful range is to be considered as restricted to 3,000 yards. This is practically fixed by the consideration, that the gunners must always be able to see what they fire at, and to observe the effect of trial shots when employed to determine the range.

As regards rifle fire, a battery may come under the long range fire of infantry (usually directed by volleys) at 1,700 yards. At 800 yards the gunners can be picked off by skirmishing marksmen.

It would therefore appear that positions taken up by artillery within the limits of the 1st zone, i.e. not further from the enemy than 3,000 yards, nor closer to his infantry than 1,700 yards, promise the best effect combined with the greatest safety to men and horses. As a rough rule this may guide artillery, but under favouring conditions of ground and atmosphere, and with the use of range-finders, guns may often be used with advantage beyond the distances laid down ; and with a long line of guns, there must always be diversity of range, as the distance of some of them from a given object will inevitably be greater than that of others.

Guns may also, for the gaining of special advantage, require to be brought into action under effective fire of infantry, or to be retained under it, at possible or even probable loss to men and guns. The early development of artillery fire in force is one of the marked features of modern warfare, and, where a clear tactical advantage is obtainable thereby, considerations of danger must not be allowed to outweigh all others; nor is there any reason why artillery should not suffer losses in battle proportionate to those of the other arms.\*

As regards the objective of artillery, guns should generally be directed upon that arm of the enemy which is at the time the most predominant. At each stage of an action one arm is for the moment the principal one, and should be checked by opposing fire; but if any doubt arises as to which threatens most, troops rather than guns should then be the objective of artillery. At the commencement of an action, however, if the enemy's artillery can be silenced by an early concentration of fire, it should be promptly effected, in order to clear the way for infantry attack.

As artillery is powerless when in motion it should remain in one position so long as its fire is thoroughly effective therefrom, and all further movements should be made with the greatest rapidity possible, so that no time may be lost in again coming into action.

In selecting positions for artillery, the first and leading principle is that fire-action against the enemy should be as little as possible impeded by any accidents of ground. That the guns should be hidden from the enemy's view, and more or less protected from his fire by natural or artificial† cover, may also be looked on as important, but not so much so as that their action should be free.

\* At Gravelotte, neglecting extreme cases, the ranges varied between 3,300 and 650 yards.

† The use of shields for protection of the gunners against the enemy's bullets as proposed by Major-General C. B. Brackenbury, R.A., is fully gone into in the concluding pages of Pratt's *Field Artillery*, the third volume of this series.

If a defensive position is to be taken up and held, the guns should be entrenched.

Well-defined and isolated positions should be rather avoided for guns as being too conspicuous, and no cover for the enemy's infantry should be within effective rifle range, unless the guns are completely protected from it. Smooth ground, either level or sloping gently, and soft enough to prevent the rebounding of bullets and pieces of shell, is the best for an artillery position.

#### RESERVE OF ARTILLERY.

The reserve of artillery as employed in the field should consist of men, horses, and ammunition, rather than of guns, because the guns themselves are seldom disabled by the fire of the enemy, and can continue in action so long as they are left supplied with the means of working them, and with horses to move them whenever necessary.

#### ARTILLERY FIRE.

The moral effect of the fire-action of artillery is very great. Some think it more so than the physical effect, looking at total results of a campaign. On the other hand, in the very war from which this deduction has been principally drawn, many instances undoubtedly occurred where the physical effect of guns in action decided the day; and it is to be remembered that a great part of the artillery fire in an action is directed against troops under cover, where, if it produces but little physical effect, that of infantry would probably produce none at all.

THE VARIOUS KINDS OF FIRE are known as follows :

1st. With reference to the horizontal plane.

*Front or frontal fire* is that which is directed perpendicularly, or nearly so, to the general line of troops fired at.

*Oblique fire* is that which is directed obliquely to the line of troops fired at; it is more effective because more searching than the last.

*Enfilade fire* is one which rakes the enemy's line of troops. The gun must be posted in prolongation of the line

to be raked. This is a most decisively effective fire, being also demoralizing to the enemy on account of the impossibility of reply.

*Flanking fire* must be directed along the front of, or nearly parallel to, the line to be flanked or defended. It would thus take in flank an enemy approaching to direct attack. This fire has much of the same advantages as enfilade fire.

*Cross fire* means that the projectiles from guns in different positions cross one another at a particular point of ground. It partakes somewhat of the nature of a flanking fire, and produces by its distracting and disconcerting action a peculiar moral disorganization. It is in this rather than in frontal fire that the long range of modern artillery tells with such effect.

2nd. With reference to the vertical plane.

*Direct fire* is that from guns with service charges at all angles of elevation not exceeding  $15^{\circ}$ .

*Indirect or curved fire* is that from guns with reduced charges, at all angles of elevation not exceeding  $15^{\circ}$ . In this case the object to be fired at is unseen by the gunner, the projectile pitching upon troops concealed behind a hill or obstacle.

*High angle fire* is that directed from guns at a greater elevation than  $15^{\circ}$  with any charges. This term now includes what used to be called vertical fire, so named from the general direction of the projectile on impact.

Besides the above, which are the only terms officially recognised, *Ricochet fire* is still in use; but, in its strict sense, being only applicable to fire with reduced charges from smooth-bores, it should be considered obsolete. Ricochet enfilades or searches into a line of troops by a series of grazes and bounds of the shot, but the projectile of rifled guns, not being spherical, does not act truly on rebound, and rifled shells with percussion-fuzes have a far greater effect than the bounding of the old round shot.

## PROJECTILES.

*Common Shell* is a hollow cast-iron elongated projectile, filled with a large bursting charge of powder. It bursts into a few large pieces, and is sometimes used, at both short and long ranges, against troops in mass, or against troops in line, if enfilade or oblique fire is possible; but chiefly against buildings, or obstacles, and to fire combustible materials. It is also employed for shelling villages, stockades, &c. It is known by being painted black.

*Shrapnel Shell* is packed with bullets, which are liberated in their flight at the proper moment, by a small bursting charge of powder breaking up the outer case. This projectile is used against troops in all formations, when in open view. Shrapnel has been called by some writers the 'man-killing' projectile, and its effect depends on the velocity of the shell at the time of bursting. With muzzle-loading guns it is very effective up to 2,500 yards, and moderately so up to 3,500. The new breech-loading field guns have much higher velocities than the old muzzle-loaders, and their shrapnel fire is proportionately more powerful. Shrapnel shell is distinguished from common shell by the head being painted red.

*Case Shot* consists of a thin metal cylinder, packed with small balls. The case breaking, by the discharge, the balls are liberated at the muzzle, and spread over a considerable space. Case shot is used up to an extreme range only of 350 to 400 yards. If the ground in front of the enemy is hard or stony, the result is more effective. Case is employed against cavalry or infantry at close quarters.

Shrapnel shell loaded the reverse way without plug or fuze may also be used as case, on emergency, within 100 yards. Its effect is very great.

## FUZES.

The fuzes used with shell are either *percussion-fuzes* or *time-fuzes*, names which explain themselves.

The bursting charge of the shell is ignited, either, at a

previously calculated moment of its flight, by a time-fuze, or, on striking the object or ground, by a percussion-fuze.

Percussion-fuzes are more reliable than time-fuzes. They are more generally used with common shell than time-fuzes, the limit for error permissible in the case of the common shell being very small. It must burst at or close to the object in order to be effective.

On the other hand, time-fuzes are more applicable to shrapnel, which should burst more or less short of the object aimed at. The greater the range the nearer to the object should the point of bursting be. At short ranges, say under 1,500 yards, the distance may be as much as 200 yards; but at long ranges there is such a loss of the final velocity upon which the penetration of the bullets depends, and the angle of descent is so much increased, that about 50 yards short of the object is found to be sufficient.

Shrapnel may be used effectively with percussion-fuzes, on occasions when it can be fired at short ranges over hard ground.

Percussion-fuzes should be used for shrapnel as well as for common shell, in the case of trial shots to pick up the range. It is much easier to judge of an error in range by a shell bursting on graze than if exploded in the air by a time-fuze. The use of the percussion-fuze is recommended under these circumstances, as giving valuable aid in the excitement of action.

#### NATURE OF AMMUNITION TO BE USED.

It is highly important that officers of all arms should understand which of the above projectiles and fuzes would be preferably employed, under various conditions. A few additional remarks on this head will not, therefore, be out of place.

Against troops in the open in any formation, shrapnel, if used with skill and within effective range, gives much more destructive results than common shell. The effect of shrapnel depends on—



1st. The velocity of the shell at moment of bursting ;

2nd. The exact timing of the explosion, so as to give best effect on object aimed at.

Hence to obtain greatest results from shrapnel it should generally be fired with a time-fuze, but unless the range is accurately known, neither the elevation nor the boring of the fuze for time can be exactly correct. Unless therefore range-finders are in use shells should be fired with percussion-fuzes till the range is ascertained.

Against troops or guns under temporary earth cover, it is doubtful whether common or shrapnel shell will give most results. With either one or the other the effect is inconsiderable, except as shaking the nerves of the enemy and obliging him to lie close, while infantry advances unmolested to attack.

Common shell differs from shrapnel, inasmuch as it depends for its destructive effect on its capacity for holding a considerable amount of powder as a bursting charge. This projectile, in addition to being always used beyond shrapnel effective ranges, would be preferably employed in trial shots with percussion-fuzes, as it gives a larger puff of smoke than shrapnel, and ranges are best estimated when a distinct puff is shown on graze.

Common shell, although ill adapted for use against troops in the open as compared with shrapnel, should be employed for shelling them out of villages, houses, or woods, or when behind obstructions of almost any kind. Its explosion creates much heat and easily sets fire to houses.

Case shot, being only employed at close quarters, needs no other remark than that it should never be fired over the heads of one's own troops, its action being too uncertain and scattering.

Common shell and shrapnel with proper care may be so fired if necessary, but it is very inadvisable to do so unless the distance from the guns to the troops over whom it is fired is considerable.

## TACTICAL UNIT OF ARTILLERY.

*The Battery* is the tactical unit of artillery.

A battery of field or horse-artillery consists of six guns.  
A mountain-battery or battery of position of four guns.

The war establishment of field or horse-artillery is as follows :

*Light field-battery of 12-pounder B.L. Guns.*

|                         |   |   |   |   |   |   |            |
|-------------------------|---|---|---|---|---|---|------------|
| Officers*               | . | . | . | . | . | . | 7          |
| Men                     | . | . | . | . | . | . | <u>170</u> |
| Officers and men        | . | . | . | . | . | . | 177        |
| Riding horses           | . | . | . | . | . | . | 31         |
| Draught horses          | . | . | . | . | . | . | <u>110</u> |
| Horses                  | . | . | . | . | . | . | 141        |
| Guns                    | . | . | . | . | . | . | 6          |
| Ammunition wagons       | . | . | . | . | . | . | 6          |
| Forge wagon             | . | . | . | . | . | . | 1          |
| Store and supply wagons | . | . | . | . | . | . | <u>6</u>   |
| Carriages               | . | . | . | . | . | . | 19         |

Thirty rounds of common shell, seventy rounds of shrapnel, and eight rounds of case shot, are carried with each subdivision. Of these, twenty rounds of common shell, forty-eight of shrapnel, and four of case, are with the wagon ; the remainder are with the gun.

*Horse-artillery battery of 12-pounder B.L. Guns.*

|                  |   |   |   |   |   |   |            |
|------------------|---|---|---|---|---|---|------------|
| Officers*        | . | . | . | . | . | . | 7          |
| Men              | . | . | . | . | . | . | <u>179</u> |
| Officers and men | . | . | . | . | . | . | 186        |
| Riding horses    | . | . | . | . | . | . | 77         |
| Draught horses   | . | . | . | . | . | . | <u>116</u> |
| Horses           | . | . | . | . | . | . | 193        |

\* Including a surgeon and veterinary surgeon.

|                                   |    |
|-----------------------------------|----|
| Guns . . . . .                    | 6  |
| Ammunition wagons . . . . .       | 6  |
| Forge wagon . . . . .             | 1  |
| Store and supply wagons . . . . . | 6  |
| Carriages . . . . .               | 19 |

The amount of ammunition carried is the same as for the field-battery.

The men in a battery are divided into gunners, drivers, and artificers.

The guns and wagons are horsed by teams of from 6 to 8 horses, with a driver to each pair of horses; the pairs of horses are known as lead, centre, and wheel, horses.

A battery is divided into two half batteries, called the right and left half battery, each consisting of three guns with their wagons.

It is also divided into three sections, called the right, centre, and left sections. Each section is commanded by a lieutenant, and consists of two guns with their wagons.

One gun with its wagon forms a subdivision. A subdivision is commanded by No. 1 of a gun, usually a sergeant.

The gun detachments of a field-battery consist of 8 gunners, who march or sit on the gun and wagon, under the command of No. 1 of the gun, who rides. While at a walk, the 8 gunners may either march, or be mounted, 2 on the gun limber, 2 on the wagon limber, and 4 on the wagon body. Should the gun be working without its wagon, or be separated from it by an increased pace, 3 gunners are carried on the gun limber, and 2 on the axletree seats, who, with No. 1, suffice to work the gun on emergency. On firm ground a gun can be worked by three men without much diminution of rapidity of firing. The gunners are sometimes in other services carried on the off horses for short distances. Nos. 1 of detachments are always mounted, except when in action, and ride on the left of the lead drivers of their guns.

In the horse-artillery the gun detachments at war strength may be taken at 10 men, of whom two, including No. 1, are non-commissioned officers. Of this number, 8 are mounted

on horses, and 2 on the gun limber; these last are called limber gunners. Of the 8 on horses, 3 are horse holders, the remainder in action serving the gun. Nos. 1, when mounted, are always on right of the front rank of their gun detachments.

#### BRIGADE DIVISION OF ARTILLERY.

A brigade division of artillery consists generally of three batteries, field-batteries or horse-artillery, under a brigade division commander; usually a lieutenant-colonel of artillery. In an army corps there would be a brigade division of three batteries with each infantry division. The corps artillery also, consisting of three horse and two field batteries, would be formed into two brigade divisions.

#### BRIGADE OF ARTILLERY.

The brigade is the largest tactical body in which artillery is formed, and consists of two or more brigade divisions, under a commanding officer; usually a colonel of artillery. In an army corps this officer would have the rank of brigadier-general.

#### INTERVALS AND DISTANCES.

Intervals and distances are measured from Nos. 1 to Nos. 1 when limbered up, and from muzzle to muzzle when in action.

The following calculations are made for 6 horses with each gun or wagon, it being understood that a gun or wagon with that strength of team takes fifteen yards in column of route, four yards being added or subtracted to the depth for each pair of horses more or less than six.

| <i>Intervals:</i>  | yards. |
|--|--------|
| Between subdivisions of a battery in line full interval                  | 19     |
| Between subdivisions of a battery in line half interval                  | 9½     |
| Between subdivisions of a battery in line close interval                 | 4      |
| Between batteries, or brigade divisions, in line full interval . . . . . | 25     |
| Between battery columns in line rendezvous interval                      | 25     |
| Between artillery in above formations and other troops                   | 25     |

*Frontage.*—The extent of front of a battery is five subdivision intervals plus the front of one subdivision, thus :

|                                   |                         |
|-----------------------------------|-------------------------|
| At full interval—                 | yards.                  |
| Field-battery . . . . .           | $19 \times 5 + 3 = 98$  |
| Horse-artillery battery . . . . . | $19 \times 5 + 7 = 102$ |

The front of a subdivision in a field-battery is the frontage of one gun, *i.e.* three yards. In a horse-artillery battery it is the frontage of one gun plus the frontage of the gun detachment, *i.e.* seven yards for a detachment of 8 men, with an additional yard for each file over that number.

For all practical purposes, however, *the frontage of a field-battery or horse-artillery battery, with 6 horses per gun, may be taken to be 95 yards.*

For every additional pair of horses in the gun teams, 20 yards must be added to the frontage of the battery.

|  |                   |
|--|-------------------|
| <i>Distances.</i> —In column of route :  | yards.            |
| Between the rear of one gun or wagon and heads of horses of the next gun or wagon . . . . .  | = 4               |
| Between the rear of one subdivision in horse-artillery and heads of horses of the next subdivision . . . . .   | = 4               |
| Between gun and gun detachment in horse-artillery whether marching front or rear, 1 horse's length   | = $2\frac{3}{4}$  |
| Between horses of gun detachment in horse-artillery when in two ranks, or in half sections, $\frac{1}{2}$ horse's length . . . . .   | = $1\frac{1}{2}$  |
| Between two batteries in column of route . . . . .   | = 10              |
| Between a battery and other troops . . . . .   | = 25              |
| Between No. 1 of a subdivision in column of route, and No. 1 of the next subdivision following :   |                   |
| If a field-battery subdivision, without a wagon ( $15 + 4$ )   | = 19              |
| If a field-battery subdivision, with a wagon ( $15 + 4 + 15 + 4$ ) . . . . .   | = 38              |
| If a horse-artillery subdivision, without a wagon, with gun detachment front of 8 men marching in two ranks ( $2\frac{3}{4} + 1\frac{1}{2} + 2\frac{3}{4} + 2\frac{3}{4} + 15 + 4$ ) . . . . . | = $28\frac{1}{2}$ |

In column of route, if wagons accompany a field-battery each wagon follows its gun, but for horse-artillery there is nothing laid down in the Regulations as regards the position of the wagons on the march. They would, however, in most cases (especially when near the enemy) be more likely to bring up the rear of the battery, than to remain with their subdivisions. They are therefore not included in the calculation for horse-artillery.

*Depths.*—In column of route. From the foregoing it will be seen that in column of route, the depth of a field-battery, with or without ammunition wagons, will be six subdivision distances minus 4 yards; the depth of a horse-artillery battery, without wagons, will be, also, six subdivision distances minus 4 yards.

Thus :

|   | yards. |
|---|--------|
| Field-battery, without wagons ( $19 \times 6 - 4$ ) . . .   | = 110  |
| Field-battery, with wagons ( $38 \times 6 - 4$ ) . . .  | = 224  |
| Horse-artillery battery, gun detachments front, of 8 men, in two ranks ( $28\frac{1}{2} \times 6 - 4$ ) . . . | = 166  |

The above are bare requirements, and if extra carriages or spare horses are added, as is usually the case, they must also be allowed for. Thus if a forge wagon, and two pairs of spare horses, are included with the field-battery, its length in column of route becomes ( $228 + 15 + 4 + 4 - 1\frac{1}{2}$ ) =  $249\frac{1}{2}$ ; say 250 yards.

#### PACE OF ARTILLERY.

For field-batteries the trot is the pace of manœuvre, but the walk is made much use of at drill to spare the horses. The gallop should not be employed except on special emergency.

Horse-artillery may gallop when considered desirable.

The pace of the walk is the same as for cavalry, not to exceed 4 miles an hour or 117 yards in a minute.

The trot should be 8 miles an hour or 235 yards in a minute.

The pace on the line of march for field-batteries is usually

the walk ; for horse-artillery batteries it may be increased to an alternate trot and walk of 5 miles an hour, or 146 yards in a minute.

The rate of gallop is 12 miles an hour or 352 yards in a minute.

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From the foregoing data, if the distance to be passed over by artillery is known, and the pace determined upon, the time required for a movement can be calculated.

In estimating the strength of the enemy's artillery on the march, the time occupied in passing a fixed point may form an element for calculation, as in the case of the other arms ; but it is often possible to count the number of guns, which is a surer method.

If the depth of the column of route of artillery be obtained by distant observation, a fair estimate of the number of guns and wagons together may be made, by assuming that each artillery carriage takes up twenty yards of road. This allows for intervals of distance and for tailing on the march.

## CHAPTER IV.

FUNCTIONS OF THE THREE ARMS (*continued*).

## MOBILE OR MOUNTED INFANTRY.

IN order to meet possible objections to the introduction of mounted infantry, as an adjunct to the forces we can hope to set in the field for warlike operations, its advocates and originators have wisely disclaimed intention of interfering with the functions of the cavalry arm. They put it forward as imperative that mounted infantry preserves its identity as infantry, and that its work in the field is to be quite distinct from that of cavalry. All armies have horse-artillery in order that guns may act with cavalry; infantry should also have a portion of its strength so mobile as to enable it to act with cavalry in any required enterprise.

The great advantages to be derived from foot-soldiers being able to be moved rapidly from one point to another of the scene of action, have been apparent to all military leaders, and various attempts have been made with more or less success to combine the action of cavalry and infantry.

The most important experiences are those derived from the American Civil War, wherein the combination of the functions of cavalry and infantry, the latter, on the whole, predominating, were more closely connected, than known to be under any previous conditions. In all these, and in other cases on record, the cavalry, making use of dismounted action at times, retained for the most part its power as cavalry at other times. In our own service, as already alluded to in the second chapter, we train our cavalry to dismount for fire action, when circumstances require them to do so; and we shall fully point out in a later chapter the



increased power which the cavalry arm possesses by its ability to use the carbine on foot. The danger, however, of using cavalry too much in this manner should not be overlooked. The author of 'Cavalry in Modern War,' himself an eager advocate of cavalry being trained for this duty, reminds us to take care 'that the cavalry does not become mere mounted infantry, which is the last thing to be desired. All that is demanded of it is limited to its being able, when occasion may require it, to render such services. It is no part of its duty to undertake or be drawn into long-sustained combats, or attempt, when dismounted, to cope for any length of time with the enemy's infantry.'

It is, therefore, with the view of obtaining all the good, without the attendant evils, that the service of mobile infantry has been made a distinct and separate one from that of our existing mounted forces.

The regulations for this new force, lately published, inform us that the company is to be considered the unit, each company being divided into four divisions.

The method of forming a mounted infantry regiment, now being carried out, is to train men who volunteer for the service from the infantry, and who must be already thoroughly drilled in infantry formations and in musketry exercises, and be good shots, strong and wiry men. They are to be carefully selected by commanding officers. For each period of training, a subaltern officer and thirty-two non-commissioned officers and men, are called for from each battalion on home service, selected for this purpose. The detachment so furnished forms a division of a company, and remains a distinct sub-unit of itself in the mounted infantry regiment; the division retains, in fact, the name of its regiment during the two months' training. A sufficient number of captains to command the companies of the regiment are also furnished by the battalions sending the men, and a regimental staff is organized periodically at the stations where the training takes place. An experienced officer is appointed to take command of the four or more companies which form a regiment during the training.

By these means it is anticipated that a number of officers and men belonging to our infantry arm can be trained for the special duties of mounted infantry, so that, if war demands the mobilization of the force, it can be easily and quickly formed; the numbers to be drawn from any one infantry battalion which sends a detachment being so small, it is expected that they will be spared without serious difficulty.

This system is considered to be better than that of forming a permanent force of mounted infantry. The danger of such a corps becoming too much cavalry and too little infantry would be very great. Notwithstanding the soundness of this objection, it would be possible, no doubt, to supplement the volunteers from infantry battalions on mobilization, and to keep up the strength of the mounted infantry corps during war, by enlisting small men used to horses and teaching them infantry work. The nucleus would still be formed of trained infantry, and the traditions of that arm would predominate in the corps during its period of field service.

#### TACTICAL UNIT OF MOUNTED INFANTRY.

The company is considered both the tactical unit and the administrative unit.

The regiment of mounted infantry consists of eight companies.

The war establishment of a regiment on mobilization is intended to be as follows:

|   |       |
|---|-------|
| Officers . . . . .  | 48    |
| Warrant officers, non-commissioned officers and men . . . . . | 1,052 |
| Officers and men . . . . .                                    | 1,100 |
| Chargers . . . . .  | 12    |
| Riding horses . . . . .                                       | 959   |
| Draught horses . . . . .                                      | 117   |
| Horses . . . . .  | 1,088 |

Of the officers and men here shown, one officer and 11 men remain at the base, so that the field strength may be taken at 47 officers and 1,041 men.

The war establishment of a company is as follows :

|                            |            |
|----------------------------|------------|
| Officers . . . . .         | 5          |
| Sergeant-major . . . . .   | 1          |
| Sergeants . . . . .        | 5          |
| Artificers . . . . .       | 4          |
| Buglers . . . . .          | 2          |
| Rank and file . . . . .    | <u>105</u> |
| Officers and men . . . . . | 122        |
| Riding horses . . . . .    | 119        |
| Draught horses . . . . .   | <u>14</u>  |
| Horses . . . . .           | 133        |

The company is commanded by a major or captain ; it is divided into four divisions, each under the command of a lieutenant.

The divisions are further subdivided into permanent sections or groups of four men, including a section leader. Under the present organization the men of a division will all have volunteered for this duty from the same infantry battalion, and will be commanded by an officer of their own corps. Each division is to be maintained as far as possible intact ; neither men nor horses being removed from their original divisions except for unavoidable causes. Men and horses are at all times to maintain their relative positions in the ranks, in barracks or bivouac, in stables or horse lines. Men are to be permitted within limits to choose their own sections, and once posted to a section, should not be removed therefrom.

It is anticipated that confusion or panic becomes, by this method, almost impossible ; and by the comrade system thus initiated, much work, which usually falls on non-commissioned officers, will be avoided ; comrades performing offices for one another which, under other conditions, would have to be carried out as fatigue duties by men specially detailed.

Allowing for ordinary casualties, the company of mounted infantry may be taken at 100 rank and file, for purposes of calculation. It is usually formed up in company column of divisions, the men being always in single rank. For inspection or review, two or more companies may be formed in line, with intervals between companies. The company leader is advanced three horses' lengths in front of the centre of the leading division, or of the company if in line, and each division leader is one horse's length in front of the centre of his division. At least two non-commissioned officers are in rear of each division, as supernumeraries. The remaining non-commissioned officers should be in the ranks, acting as section leaders.

#### FRONTAGE AND DEPTH OF MOUNTED INFANTRY.

*Frontage.*—The extent of front of a body of mounted infantry is as many yards as there are men, when riding knee to knee. If more than one company is in line, intervals of 12 yards between companies must be included. When at half-open intervals, the interval between each two men is half a yard; when at open intervals the interval between each two men is a yard. When in extended order the interval between each two men is 8 yards. In sections (four men abreast) the men of each rank ride knee to knee.

*Depth.*—A horse's length equals 8 feet, as in cavalry. The depth in line, including division leaders and supernumeraries, is five horses' lengths. The depth in a column of companies is equal to the frontage in line of the same force, less the frontage of the leading company. This allows a distance between companies such that a wheel to either hand will bring them into line with proper intervals.

Half column has a depth half that of column. Quarter column is calculated by allowing three horses' lengths distance between each two companies; the total depth being four horses' lengths per company, plus one horse's length extra, to include the supernumerary rank of the rear company. The depth of a company column of divisions is equal to the frontage in line of the company less the frontage of

the leading division. The depth of a column of sections is equal to the frontage in line of the same force, less any company intervals, i.e. as many yards as there are men in the column. The depth of a column of half sections is equal to twice the number of men in yards.

#### MOUNTED INFANTRY IN MANŒUVRE.

Mounted infantry should, as a rule, manœuvre at a walk, but if there is special necessity for speed, the order can be given to trot or gallop. When a corps or battalion consisting of two or more companies is manœuvring, the companies will move as a rule in columns of divisions. When companies are moving independently from one position to another, company or division column of sections will usually be employed. When under fire a more extended formation should be adopted. Companies or divisions may be extended by sections, the men of each section or group, although working together, taking plenty of room.

It must be distinctly recognised that a mounted infantry soldier fights on foot. His horse must, therefore, be taught to lead, either singly or with others. In advancing for dismounted action, cover should be sought under which the men may dismount. Patrols should be sent out to prevent surprise, and a sufficient guard must be left with the horses. An officer and a division supernumerary should, if possible, be left with the horses of each company.

The method of holding the horses depends upon whether they require to be moved as led horses from one position to another. If this is necessary, one man of each section remains mounted as horse-holder, the other three men dismounting to act on foot. If it is certain that the horses need not be moved during action, all the men may dismount, the horses being linked together, and left in charge of a section or half section of men detailed as a guard. Horses should only be linked in a place where they are secure from attack.

It must be strongly impressed upon all ranks of mounted infantry that they are not cavalry. Their horses or ponies

are given them to make them mobile infantry, and not for the purpose of their acting as quasi cavalry. Mounted infantry will often have to act in concert with cavalry, but the engaging of the enemy's cavalry in open ground must be left to cavalry. If mounted infantry are attacked by hostile cavalry they can defend themselves in various manners, and if proper precautions are taken, and proper tactics pursued, they have nothing to fear. They must never give cavalry a chance of charging them whilst mounted, but should always manœuvre so as to interpose broken or enclosed ground between themselves and the enemy's cavalry. If seriously threatened they can dismount and form a fighting line round their horses, repelling attack by a steady fire. If menaced by cavalry in open country, a company or detachment may form square ; or two or more companies acting together may form battalion square.

[For details of these formations see diagrams on next page.]

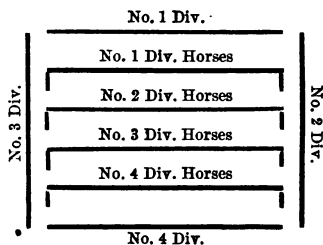
When mounted infantry find their retreat barred by cavalry, it may be advisable for them to dismount and advance in front of their horses, firing volleys ; thus opening up for themselves a line of retreat.

The effective action of mounted infantry depends upon the accuracy, rapidity, and efficiency of its rifle fire. It should, therefore, manœuvre in small bodies, sufficiently large to defend themselves if attacked by cavalry, and also to produce a solid fire effect. In acting offensively, mounted infantry would usually endeavour to hold the enemy in front by the fire of its shooting line, with its attendant support mounted, and at the same time to pass a reserve rapidly round to attack the enemy's flank. If acting with cavalry, that arm would protect the flanks of the mounted infantry itself during these operations, but if acting alone, the mounted infantry must post supports on exposed flanks and also watch the enemy carefully by reconnoitring groups or patrols.

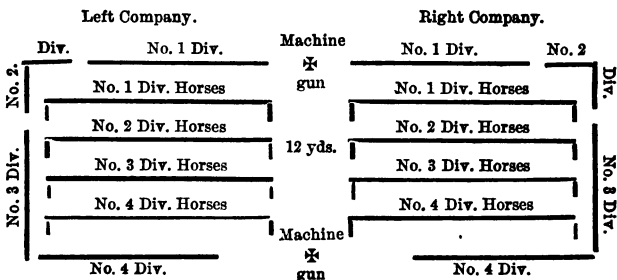
Advances or retirements can be best made in face of a weaker or stronger enemy, by passing one fighting line through another at a gallop.

## MOUNTED INFANTRY SQUARES.

## COMPANY SQUARE.



## BATTALION SQUARE OF TWO COMPANIES.



As regards the training of mounted infantry for outpost and reconnoitring duties, it should be as complete as circumstances will allow, so that if necessity arises cavalry may be assisted by mounted infantry in such work. When mounted infantry performs outpost duties, the sentries it furnishes can be posted on the principle of Cossack posts. A section forms a post, one man mounted on the look-out, and the remainder (dismounted if the enemy is distant), in close support.

Provision is made for 90 rounds of ammunition per man being carried ; but on service, as mounted infantry cannot rely on being near the ammunition wagons, this supply must often be increased. Arrangements are, therefore, made by which each man can, on necessity, have about 150 rounds in his possession.

With a few exceptional remarks the foregoing notes are based upon the regulations for mounted infantry lately issued. The importance of the subject demands further examination.

The advantages of a force of this character being made a part of our field army will sooner or later be acknowledged, but the functions of the force must be clearly understood before its value can be fully recognised. At present military opinion is not unanimous, with regard to the expediency of introducing so novel an element into our military system. This appears in some degree to arise from a fear, not altogether allayed by the disclaimers already mentioned, that mounted infantry is designed to *replace* cavalry in some of its normal functions, as well as to supplement the action of cavalry by the support of a mobile infantry.

The regulations tell us that two principles must be kept in view in the instruction of mounted infantry :

1st. That mounted infantry is intended to provide picked infantry soldiers, to act with cavalry, when great rapidity of movement is required ; to this end being provided with animals suited to the country in which they are to serve.

2nd. That mounted infantry is intended to carry on reconnoitring, vedette and outpost duties, flanking patrols, advanced and rear-guard duties, in the absence of cavalry :



this being necessitated by the numerical weakness of our cavalry arm, and by the varied character of the warfare in which British troops engage.

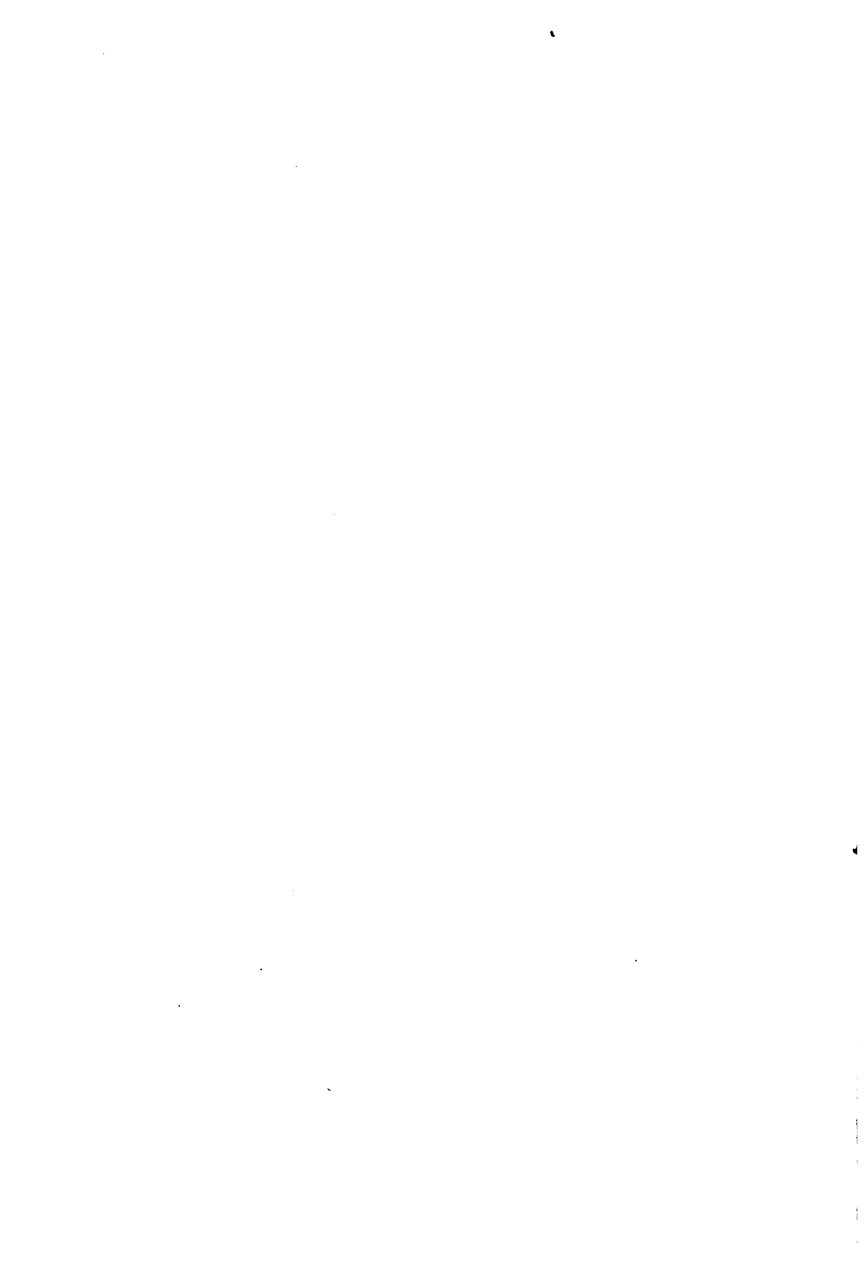
The force has, therefore, two apparent functions, one of which it can perform without much further instruction than that which it already possesses as highly trained infantry, provided that means of conveyance can be found to enable it to accompany cavalry or to act in concert with cavalry. For the purpose of such portion of its duties the force could act as well if sent forward on cars, wagons, or bicycles, were the country suitable for such arrangements, as it could if it were a mounted corps. For the duties involved in the other function, the force is clearly required to be mounted on horses or ponies, and to have been exercised to a required extent in cavalry detached duties.

Putting conveyance on wheels aside, it is a matter beyond contention, that with very short instruction, the picked men of our mounted infantry force may be taught to ride well enough, for all purposes of rapid movement from point to point. Whether time and opportunities will be available, to make them sufficiently practised riders, to enable them to undertake the rough cross-country work which must be done by cavalry in scouting and such like duties, is not so certain.

Would it not, therefore, be better for the advocates of mounted infantry to pin their faith more firmly to the first of these functions, and to say but little about the second, the carrying out of which, moreover, notwithstanding their declared intentions, might cause the force to clash unduly in its duties with those of the sister arm?

In all that has hitherto been said or written both in regard to the use of mounted infantry and also in respect of the kindred subject of dismounted cavalry, conclusions have been freely drawn from the action of the so-called American cavalry in the late Civil War.

Lord Wolseley, speaking at the United Service Institution in favour of mounted infantry, refers to having seen in America the largest force of that kind ever put in the field.





They were nominally called cavalry by those who did not know what cavalry were, but they were purely and simply infantry in every way, and armed and drilled as infantry. They had the locomotive power, or a certain amount of the locomotive power of cavalry. The most distinguished of all their leaders was an infantry officer, General Sheridan. Lord Wolseley further remarked on this occasion that he thought the regular cavalry soldier should be taught to fight on foot, when it becomes necessary to make him do so, but to make him do so except on an emergency is a waste of power.

Colonel Chenevix Trench in his 'Cavalry in Modern War,' advocating a more extensive use of the dismounted service of cavalry, gives a highly interesting account of the bold and skilful manner in which the American horsemen on both sides acted during the war, both mounted and on foot. He concludes from the narrative of the facts and feats which he details, that in the wars of the future dismounted cavalry will have a great part to play.

The examples of the American war are, therefore, equally relied upon by the advocates of mounted infantry and of dismounted cavalry. As a matter of fact, incidents drawn from these campaigns could be quoted as good examples of the action of both arms, for it must be remembered that the war in America lasted some years, and that although the cavalry regiments on both sides were more or less of an irregular type, the men in most of the corps after they had served for a time became veteran soldiery, not only expert in their infantry work, but also skilled and experienced in all cavalry exercises. At one time they were on foot as a shooting-line to meet the enemy's infantry, at another moment mounted to charge the enemy's cavalry.

Some corps, however, notably those of Morgan and Forrest on the Confederate side, continued throughout the war to retain their marked irregular character. Their commanders had had no military education whatever, and were veritable guerilla or partisan leaders, and the troops they commanded were in reality nothing but mounted infantry.

Although they almost invariably fought on foot and hardly ever as cavalry, it must be noted that the men of Morgan's and Forrest's corps were admirable riders and skilled in all detached duties of cavalry, such as scouting and patrolling, but their horses were not drilled to act in the ranks in compact bodies.

A short sketch of Morgan's manner of fighting may not here be out of place. On nearing the enemy one of the troops on the flanks went forward, and, deploying, covered the front with mounted skirmishers. Meanwhile the main body dismounted, each horse-holder having to hold four, or sometimes eight horses, when a large number of combatants was required. The dismounted men formed single rank, extended at 2 or 3 yards intervals in a line slightly concave, the ends of the line being advanced towards the enemy. When deployed this line advanced at the double, the skirmishers clearing away to the flanks. Only one line would be thus deployed when the ground gave shelter; but if the ground was open, two or even three lines would be formed, each exactly in rear of the one in front of it. The first line opened fire and lay down, the second line then advanced, passed through the intervals of the first line for a short distance, opened fire and lay down. The first line then advanced in its turn, and the attack continued thus, the rear line always passing through intervals of the line which had just made an advance to the front. Both front and flank attacks were carried out in this way.

When once they had got within close range of the enemy it was the invariable custom of Morgan's men to use their revolvers. It was, moreover, a favourite manœuvre of theirs, to hold the enemy and engage his attention by feints on his front, while a considerable portion of the force made a wide turning. Then, having reached the point aimed at in the enemy's rear, the men dismounted, and fought on foot to strike an effective blow.\*

Of the higher trained mounted troops those commanded by Sheridan on the Federal side claim attention, their action

\* *Cavalry in Modern War.*

having greatly contributed to hasten the conclusion of the war. This force acted with equal effect mounted or dismounted. The battle of Winchester in the fourth year of the war, which decided the fate of the Shenandoah Valley, was won by a charge of Sheridan's cavalry. Colonel Fletcher's account of this affair is as follows :—'The infantry on both sides was now fiercely engaged, and success was inclining to the Confederates, when Sheridan brought up his reserves of the army of Western Virginia. Even with the preponderance of force that these reinforcements gave to the Federals, Early's men held their ground. Then Sheridan, riding to his right wing, found Torbett with two divisions of cavalry under Merritt and Averill. There were at least 7,000 sabres, headed by Custer, Devin, Lowell, and others well known as dashing cavalry officers, and this force, well equipped, well mounted, and well led, was hurled against the left wing of the small Confederate army. The charge was magnificent ; nothing could resist it ; the enemy was doubled up ; and as the storm of cavalry broke on his flank the Federal army advanced. The victory was complete. In confusion and rout the Confederates fled through Winchester, losing heavily in prisoners.' It must be admitted that this was good cavalry work for 'mounted infantry' to perform, and great credit is due to Sheridan for the high state of efficiency to which he had brought his troops, which enabled them to act in such a brilliant manner. This, however, was the only instance during the whole war in which an important action was decided by a cavalry charge.

In the last campaign, in Virginia, when following up the final retreat of the Confederate army, we find these same troops sharing in the daring and original tactical movements, by which Sheridan helped in no small degree to conclude the Civil War, and nearly always acting as a dismounted force. While Grant followed with the main Federal army, Sheridan came up with the Confederate rear-guard, 10,000 strong. He saw that he could not defeat the rear-guard by a direct attack, so he passed on to the west until he got upon their flank ; then dismounting his leading division he attacked the

Confederate flank, and held fast and annoyed the enemy with his fire, whilst his other divisions swept on ahead of the retreating army, placed themselves directly on the path of the Confederates, and with their fire-arms disputed the passage of the army. By the defensive power obtained from the effective fire of his dismounted men, who were armed with the Spencer repeating rifle, Sheridan was enabled thus to intercept in their retreat, and delay till they were captured, three whole divisions of the Confederate army. Finally, the retreat to Lynchburg was cut off by wide turning movements of Sheridan's cavalry, who dismounted, checked the retreat, and so brought about the surrender of the whole of Lee's army at Appomatox Court House.\*

What Americans can do, Englishmen can do, and, given like conditions, who can say an equally efficient force might not be formed in the British service? The same conditions, however, not only do not exist, but it is most improbable that they would ever be present. Continental wars will be brief, and the continuous training necessary to bring mounted infantry to the American pitch of perfection will not be possible. We must, therefore, be satisfied to utilise some of our trained infantry as mounted infantry, by making it mobile but without cavalry attributes, and to keep our cavalry, which, so far as it goes, is the best in existence, as much as possible to its normal cavalry duties. To spoil this cavalry by too much infantry work would be a dangerous experiment, which might result in evil, and which can hardly result in the highest good, as the cavalry have not the long rifle. At the same time it is necessary to accustom our cavalry so far to dismounted service that they can act efficiently on foot in case of need. More should not be required from this arm.

We have a well-trained infantry available, sufficiently numerous for some of it to be set apart for mobile infantry work. So long as we confine ourselves in organizing the force, to require pure infantry action from it, with a mobility added which will permit of its aiding cavalry in raids and such like

\* Denison's *History of Cavalry*.

operations, thus combining together skilled infantry to shoot and skilled cavalry to charge, it appears possible to attain the advantages which the Americans derived from the two-fold action of their mounted troops, without the disadvantages attendant on their hybrid organization.

In keeping strictly in view the main purpose for which mounted infantry is designed, namely, to provide a special corps of skilled infantry indued with powers of locomotion, enabling it to be pushed rapidly forward during field operations, it appears desirable that the means of transport, in a country where roads exist, should not be confined to mounting the men on horses, ponies, or such like. The establishment ought to provide for cars or wagons of some kind to belong to each battalion of mounted infantry, for the purpose of carrying a portion of the force to the scene of action or within easy reach of it. There might be two of these to each company. This would either reduce the number of horses necessary for the company, as two teams of 4 horses each would convey some 30 men ; or else it might be so arranged that the cars were in addition to the establishment of horses, to provide for the transport of men dismounted by casualties, for the loss in horses occasioned by the arduous work to be undertaken by this force during a campaign would doubtless be great.\*

\* Some twenty-six years ago the writer, then a young officer, submitted to his superiors a suggestion, that detachments of infantry might be mobilized, so far as to accompany cavalry and horse-artillery, by mounting the men on cars made from artillery wagons specially adapted to the purpose. The frame of the car was to be in two parts, and similar to the body and limber of an ammunition wagon, to enable it to go over rough ground ; seats were to be fixed to each part of the wagon instead of the usual ammunition boxes. The wheels were to be lower than in the ordinary wagon, the object being that the seats should be as near the ground as possible.

As it was twenty-six years ago, the writer need hardly add that the notion was briefly dismissed as chimerical. It might perhaps be utilised at the present time in designing mounted infantry cars, and any officer who will work out the details is quite welcome to the suggestion so far as the writer is concerned.



As soon as the advantages are felt by commanders, of the rifle being well to the front in all field operations, means will, no doubt, be improvised during the campaign for moving infantry quickly. But it is better to consider these matters in advance in time of peace, to avoid necessity for shifts and expedients in time of war. It is evident that in addition to the force of trained mounted infantry, reinforcements might always be given thereto, on special occasions, by sending forward detachments of marching infantry, if transport for the latter was ready to hand. In the Russo-Turkish war of 1877, infantry was on several occasions sent to the front in an improvised manner. The Russian dragoons, accustomed to act on foot, and armed with a rifle and bayonet, in more than one instance took infantry men behind them on their horses, and thereby doubled their numbers in the ensuing action on foot. An incident which is related in Greene's 'History of the War' as occurring at the battle of the Shipka Pass may also be recalled to mind. During the afternoon of August 23 the Russian position was almost desperate. The Turks in superior numbers were advancing towards the high road to cut their enemy's communications, at a time when the Russians had no reserves left to meet the attack. 'The moment was the most critical of the campaign ; if this Turkish column reached the high road, and established itself in the rear of the Russians and upon their one line of communication, a disastrous retreat before a largely superior force, or possibly a surrender, was inevitable . . . At this moment (about 4.30 P.M.) appeared in sight the first of the reinforcements, 200 men of the 4th Rifle Brigade, trotting up along the high road on Cossack horses, from Gabrova ; with them General Radetsky commanding the VIII. Corps.' These infantry troops and others which followed enabled the Russians to hold to their position.

A most important question, connected with the mounted infantry force, is : Who is to command it in the field ?

It is said to have been decided to allot the mounted infantry regiment of each army corps to the cavalry division attached

thereto, for field service. This decision is one which affects the future of our mounted infantry force in no small degree, and it is to be hoped the arrangement will not hold good on mobilization. The mounted infantry regiment would in every way be better attached as corps troops to the army corps. If required to act with cavalry, the battalion or part of it can be detached for that purpose, but being always an infantry corps, it should not be placed permanently under command of a cavalry general. Various evils might easily arise from such a disposition, not the least of which would be that the mounted infantry battalion, as part of the cavalry division, might come to be looked upon as a quasi-cavalry corps, inferior to the standard of the regular cavalry. This would be a most undesirable position for the force to hold. Its proper standing in the army should be that held by light infantry regiments in the Peninsula. The mounted infantry battalions should be not only more mobile than the rest of the infantry, but should be representative bodies of all that is most dashing, daring, and brilliant in the infantry force of the army; and no disposition should be made which would detach them permanently from their own branch of the service.

Another not less important question is: What part mounted infantry is to take in the various operations of war?

If the corps now organized is to become a success it will be necessary that the scope of its possible action be more clearly defined and understood than it appears to be at present. The following suggestions as to what it should do, and what it should not do, are put forward in the hope of clearing the way even but a little in this respect, and with no more authority than can be derived from a concurrence therein of some whose opinion is accounted of value at the present era.

As a preliminary to the attack of a position, mounted infantry and machine guns may accompany cavalry and horse-artillery, and join in the advanced guard action to drive in the enemy's outlying posts. When the guns have

come into action against the posts, at a distance exceeding infantry range therefrom, the mounted infantry and machine guns with part of the cavalry may advance still further, until the posts can be brought under long-range fire of the infantry and machine guns. As the fire of the artillery has effect the mounted infantry and cavalry may advance still closer, part of the former dismounting to attack the posts in front, and part passing to a flank with a similar object; the cavalry in each case protecting the flanks of the mounted infantry, and also seizing upon any openings for cavalry attack themselves on the enemy's advanced troops or guns.

On the defence, mounted infantry accompanies the cavalry and guns sent out to delay the advance of the attacking troops, and to deny them possession of strong posts in front of the position. Mounted infantry at this stage assists by its fire to keep the enemy's guns from deploying within effective range of the position.

In making flank attacks, and in the defence against them, a mobile infantry which can accompany cavalry, with attendant machine guns, to act as infantry, has great value. In raids, in the attack and defence of convoys, in seizing positions far ahead to hold them till the marching infantry comes up, mounted infantry adds undoubted strength to cavalry, and may even at times act independently.

Artillery when requiring special escort on account of acting at a distance from other troops, may look for efficient aid from mounted infantry; the escort for field artillery would be best furnished in such cases by this force, and when detached to act with cavalry and horse-artillery, mounted infantry would also look out for attacks on the artillery as part of their duty, the fire of their rifles being specially utilised to keep off hostile cavalry whilst the guns are changing position.

Mounted infantry should not be expected to undertake reconnaissance, when cavalry is available. No doubt a few men may be trained, who are exceptionally well mounted, to be kept for this work, and as the force gains experience in the field this number may increase; but as a rule the

bulk of the force should be treated altogether as infantry fighting men provided with means of rapid movement.

When forming part of an advanced or rear guard, the detachment of mounted infantry should move on the main route near the van or rear, ready to dash out rapidly if required to seize, hold, or defend a bridge or defile. They should not be called upon to do the scouting either in advance, in rear, or on the flanks.

On outpost duty their work should be confined to accompanying strong patrols to the front for offensive purposes or such like duties. They should not be expected to do the advanced reconnoitring, but those men who are well mounted and have been specially well instructed may sometimes be put on an advanced look-out post on the Cossack system ; or they may move along roads at night in direction of the enemy as standing patrols or patrolling posts, to save the cavalry some of their harassing work in these respects.

At the commencement of a campaign at all events, no more than the above should be looked for or expected from mounted infantry, and this much can only be relied upon as a consequence of the nucleus of the corps having been carefully instructed during peace time, on the excellent system now being carried out at our camps of instruction. After a time, many of the men will get more familiar with mounted duties, and in such case may assist cavalry in various ways, relieving them from patrol work on roads, orderly and other like duties, all of which combine to wear out a cavalry force. This, however, cannot be counted on from the first, and can only result from good training both for men and horses.

Unless the mounted infantry force is well horsed from the early commencement, but indifferent results will be obtained. If this is not carried out in a proper way, mounted infantry cannot keep up with cavalry on the march. Unless it can do so, the strongest argument in favour of the creation of the force falls to the ground.

We must not forget in concluding these remarks that considerable experience has been already gained in our late smaller wars, both in South Africa, Egypt, and in the

Soudan, of the manner of improvising and working mounted infantry detachments, composed of volunteers from different infantry regiments. The satisfactory character of this experience has virtually influenced the authorization of the corps now in course of being trained. In future wars, whether irregular or regular, Colonial or European, we may be sure there will be work for mounted infantry. It is well to be prepared in time, and if the force now started is carefully managed, and its duties clearly laid down, so that all who run may read, and know not only what mounted infantry have to do but what they have not to do, then in such case we may fairly hope that it will be a clear gain to the British army to have instituted and trained a force of this kind, for service in the field.

#### MACHINE GUNS AND THEIR USES.\*

It may now be regarded as certain, that in any war engaged in by British troops, machine guns of rifle calibre will be attached both to cavalry and infantry, and also to mounted infantry if such a force is available.

The rifle calibre machine guns at present issued for employment in our land service, are the 2-barrel Gardner, the 3-barrel Nordenfelt, and the Maxim; the last of these three is the latest development of this kind of weapon, and is by far the best gun yet introduced. These guns are now issued for instruction purposes to cavalry and infantry regiments; and it has lately been ordered, that in every troop of cavalry and company of infantry a detachment should be made thoroughly efficient, both in the drill and in the mechanism of the machine guns in possession of the corps. The detachment is to be in each case under a sergeant of superior ability, and to consist of active intelligent men, marksmen or first-class shots, mechanics by trade if possible.

*The 2-barrel Gardner.*—This gun has the axes of its

\* Machine guns should not be confused with quick-firing guns; the former fire bullets, the latter fire shell. Nothing being yet definitely fixed in regard to the introduction of quick-firing guns, they are not discussed in this volume.

barrels parallel, being kept so by a disc which passes over the muzzles and is secured to the barrels. It is fed by a vertical cartridge-feeder holding 30 cartridges in one column, which is itself replenished by a wooden cartridge-holder. The gun is worked by a handle having a rotary motion like the handle of an organ. It is sighted up to 2,000 yards. It can fire about 240 shots a minute.

*The 3-barrel Nordenfält.*—The three barrels lie in a horizontal plane, their axes being parallel to one another; the barrels are passed through the centre cross-piece or transom, which is of gun metal, and also through the fore-end, of a rectangular steel frame, and are kept in position by their breech ends being screwed into the centre transom. The gun is fed by means of a distributor, which is replenished by hoppers holding each a proportion of cartridges; the hoppers fit on to the top of the distributor and are changed when empty. The gun is worked by a hand-lever having a forward and backward motion. It is sighted to 2,000 yards, and can be fired at the rate of 450 rounds a minute.

*The Maxim gun.*—This gun consists of two portions, the recoiling and the non-recoiling portion. It has only one barrel, which with its extension forms the recoiling portion. The barrel is surrounded by a water-jacket to reduce its temperature, as otherwise, on account of the rapidity of fire possible with the Maxim gun, it would become in a short time red hot. The jacket is easily refilled with water if evaporation necessitates it. When a knob is pressed, or a trigger pulled, the first cartridge (fed in by hand) is fired, and then, if the pressure on knob or trigger is maintained, the gun continues to fire automatically, without external recoil, at the rate of 600 shots a minute; each cartridge being fed into the gun from the belt which holds the ammunition, placed in the barrel and fired, and then ejected to make room for another cartridge, altogether by the action of the recoil of the barrel within its jacket. The cartridges are supplied in belts or tapes containing 350 each, which can be refilled if necessary. The belts require no manipulation, beyond the insertion of the end of the tape into the feed box.

The Maxim guns first issued took the Martini-Henry ammunition, their calibre being accordingly  $\cdot 45$  inch ; these guns are now being replaced by guns of  $\cdot 303$  inch calibre, to take the new service ammunition.

The effective range of the gun is theoretically that of the rifle of same calibre, as the same cartridge is fired ; in practice, however, it is found that the gun is effective up to a greater range than the rifle.

As it is extremely probable that the Maxim will supersede all other rifle calibre guns, some further particulars regarding it may be of interest to the reader.

*Service.*—This machine gun has a detachment of two men for its service, one to lay and fire, the other to attend to the supply of ammunition ; as, however, the cartridges are made up in tapes or belts of 350 each, which are carried conveniently on the gun carriage, and the feeding consists merely of inserting the first cartridge in its place, and leaving the automatic action to do the rest, it is clear that the service of the gun is not materially affected if only one man be available.

*Scattering.*—In all the various mountings of the gun, the *modus operandi* as regards firing is the same ; the gun can be left free to move in any direction, in which case its fire is under the control of the layer's hand, the action resembling that of a fire-hose ; or it can be clamped so that it is only free to move within prescribed limits, in which case the fire would be scattered by the hand of the layer within those limits ; or again, it can be clamped rigidly so that the fire will be delivered in a continuous stream in one direction only.

*Night-firing.*—The second and third cases just given show how the gun can be utilised for night-firing, by obtaining the necessary elevation and direction during the day to sweep any given zone, and clamping the gun to ensure its bearing in the same direction at night.

*Care and preservation.*—The mechanism of the Maxim gun is simple and not liable to get out of order ; it will also work even under most disadvantageous circumstances, though of

course with less effect. An officer in charge of machine guns should make it his first business to thoroughly understand his weapon, mechanically and technically, as well as tactically; he will then not only know how to get the greatest use out of it, but will avoid discreditable blunders. The mechanism should at all times be clean and lightly oiled, and the water-jacket filled with water (if required to be ready for action); no tools are required for the care and preservation of the mechanism, a clean oiled rag being all that is wanted. A few spare parts are supplied in case of casualties, most of which can be fitted with the most ordinary appliances; for example, a new lock can be put in by hand in a few seconds.\*

*Mountings for machine guns.*—There are several mountings for machine guns, of which the most important are the field carriages and the mounting for pack transport. The field carriages are of two kinds, those for infantry, and those for cavalry and mounted infantry. There are also slight differences between the carriages used for both the Gardner and Nordenfelt guns, and those used for the Maxim gun, but they are not of importance from a tactical point of view. The carriages designed for the new .303 calibre Maxim gun will therefore be described as typical mountings.

*Cavalry carriage.*—This carriage, called a 'galloping carriage,' is not unlike an ordinary field limber, but it has the body supported by springs. The gun is mounted on the carriage; on each side of the gun are two ammunition boxes the tops of which form the seats for the two men who work the gun; each ammunition box holding three small boxes, containing 350 rounds apiece in a tape ready for use. The carriage is drawn by two horses, one in the shafts and the other ridden. The gun can be brought into action either with the horses in the shafts or out, and can be used on the move at close quarters.

\* A detailed description of the mechanism and action of the Maxim gun, written by Captain F. G. Stone, R.A., will be found in the 1888 volume of the *Proceedings of the Royal Artillery Institution*. Much other information respecting machine guns has been supplied to the author by this officer.



|                                 | cwts. | qrs. | lbs. |
|---------------------------------|-------|------|------|
| Weight of gun . . . . .         | 0     | 0    | 50   |
| Mounting complete . . . . .     | 9     | 3    | 23   |
| 3,500 rounds of '303 ammunition | 2     | 0    | 21   |
| Total . . . . .                 | 12    | 2    | 10   |

This is about the same weight as falls to the share of two horses in the horse-artillery.

|                                 | inches. |
|---------------------------------|---------|
| Diameter of wheels . . . . .    | 56      |
| Height of axis of gun . . . . . | 59      |
| Track . . . . .                 | 52      |

*Infantry carriage.*—The infantry mounting consists of a light two-wheeled carriage fitted with shafts and swingle-tree and equally adapted to horse or mule transport on the march, or to man handling in action. There are four magazines, two above and two below the axle ; each magazine contains four ammunition boxes, and is faced with a thick steel plate which forms a shield to the ammunition ; there is also a light shield to protect the man laying the gun.

The usual entrenching tools are carried at the sides of the carriage.

|   | cwts. | qrs. | lbs. |
|---|-------|------|------|
| Weight of gun . . . . .   | 0     | 0    | 50   |
| Mounting complete . . . . .   | 5     | 2    | 25   |
| 16 ammunition boxes each containing 350 rounds of '303 ammunition . . . . . | 3     | 0    | 0    |
| Total . . . . .   | 9     | 0    | 19   |

|                                 | inches. |
|---------------------------------|---------|
| Height of axis of gun . . . . . | 39      |
| Diameter of wheel . . . . .     | 48      |
| Track . . . . .                 | 54      |

*Tripod mounting.*—The tripod mounting is intended for pack transport, and consists of a light tripod the legs of which are of tubular steel, the rear leg being the longest and provided with a seat for the man who lays the gun. The gun and tripod are carried on one mule together with a proportion

of ammunition, the remainder being carried on a second pack-animal.

|  |      |
|--|------|
|  | lbs. |
| Weight of gun . . . . .                    | 50   |
| „ tripod . . . . .                         | 47   |
| „ ammunition box with 200 rounds . . . . . | 30   |
| Total . . . . .                            | 127  |

*Level of wheels.*—Artillery men are accustomed to deal with corrections on account of the wheels of their guns not being level, and a compensating sight (Scott's) has been issued to the horse- and field-artillery for this purpose. Cavalry and infantry soldiers do not, however, so readily realize that unless the line of sight and the axis of the gun are in the same vertical plane (or parallel vertical planes), the shooting cannot be accurate; this is a point so readily overlooked and so serious a source of error, that it is necessary to insist strongly on its importance. A spirit-level will at once show whether the wheels are on the same level, but the eye can judge with tolerable accuracy, especially if assisted by a picket or straight pole of any sort placed across the top of the wheels; the level should be corrected by excavating with a shovel under the higher wheel, which can usually be effected in a few seconds.

*Use of machine guns.*—These guns were first brought into notice, by their employment in the war of 1870 on the side of the French. A grand tactical error was then committed, by their being formed into batteries and pitted against the German artillery, for which purpose the guns were certainly unsuited.\*

It is now agreed that the machine gun is essentially a

\* Judged by the present guns, the French Mitrailleuse was a crude undeveloped machine gun; its extreme effective range being about 1,000 yards, and its rate of fire comparatively slow. The effect of a single discharge of twenty-five shots from this weapon was not to be compared with the effect of a 12-pounder shrapnel shell. At close ranges it could scarcely compete with a 9-pounder case shot.—*Discussion at the Aldershot Military Society, July 1889.*

weapon for infantry, to add to the intensity of their fire ; and by the use of galloping carriages this same weapon, representing the fire of an infantry detachment, can also be employed in combination with mounted troops.

Machine guns when added to cavalry or mounted infantry have a wide field of usefulness opened to them. In raiding operations they will always form an important addition to the force employed. In the attack upon, or holding of advanced posts, bridges, defiles, &c., these guns will be invaluable if properly handled. In the early stages of the attack upon a position galloping machine guns can join in the advanced-guard action, keeping the enemy's cavalry in check, and supporting the attacking cavalry. They will often be able, in conjunction with mounted infantry, to bring a flanking fire to bear upon advanced posts, so as to force the garrisons to leave them. As the attack develops and the main body comes up the infantry machine guns will engage the enemy's infantry, and also protect infantry and artillery from cavalry flank attacks. At the later stages the divisional machine guns fight alongside their own infantry, at a time when the fire of the attacking artillery is often more or less masked by its own infantry, and the guns are forced to seek fresh positions. At this juncture the deadly fire of machine guns upon the defending artillery may help to shorten the action, by completing the task of silencing the guns of the position which the attacking artillery had commenced.

In the defence of a position the machine guns attached to the infantry brigades will find suitable places in the firing line ; those attached to the cavalry and mounted infantry being reserved for counter attacks.

#### THE MAGAZINE RIFLE.

The first issue of the magazine rifle, sword-bayonet, and scabbard, finally approved of for the British Service, has been made to the army as this edition goes to press. The breech-action of the rifle is on the 'bolt' system ; an arrangement of the cocking piece, allows the rifle to be carried at half-cock. The barrel and rifling are as follows :—Length of

barrel, 30·2 inches ; calibre, 0·303 inch ; rifling on the Metford system ; grooves, 7 in number, 0·004 inch deep ; lands (*i.e.* the spaces between grooves), 0·023 inch wide ; twist, left-handed, one turn in 10 inches, or 33 calibres.

The magazine is a box of sheet-steel, fixed in front of the trigger-guard ; being inserted through an opening in the body, and kept in its place by a spring. It holds eight cartridges, which may be put into the magazine either when it is fixed to the rifle or when it is detached. There is a spring working upwards, fixed at the bottom of the magazine ; this moves a platform which forces the column of cartridges upwards. On the right side of the body there is a 'cut-off ;' this if pressed inwards will stop the feeding of cartridges from the magazine at once, and allow the rifle to be used as a single loader. By pressure of a small lever just inside the trigger-guard, the magazine can be detached.

Two magazines are issued with each rifle, one of which is attached to the rifle by a chain link, the other being a spare magazine to be carried by the soldier, filled if necessary, in a small pouch attached to the left brace.

As the British soldier is constantly losing his jag and oil bottle, a hollow in the butt is arranged to receive these articles. A wooden hand-guard is fixed over the breech end of the barrel, to give protection against the heat generated by constant firing.

The Metford rifle is furnished with two sets of sights. The lowest or 'fixed sight' is that for 300 yards.

Employing this sight, the figure of a man of 6 feet can be hit at any distance up to 500 yards' range, by direct aim at the figure. The highest graduation is for 1,900 yards.

Extreme range sights, graduated from 1,800 to 3,500 yards, are also fitted to the rifle.

The sword-bayonet is two-edged, and is fitted with wood 'grips.' It is fixed under the barrel, being secured by a stud and spring in the usual manner.

The rifle with magazine empty weighs 9 lb. 6 oz., the sword-bayonet 15½ oz., the scabbard 4½ oz. ; the magazine when empty 4½ oz., when full 13 oz. The rifle is 4 ft. 1½ in.

long ; with the sword-bayonet fixed 5 ft. 1·45 in. long. The length of the sword-bayonet is 1 ft.  $4\frac{11}{16}$  in.

The cartridge of the new rifle weighs less than the Martini-Henry bullet alone. This is an important feature of the new weapon, as it enables more ammunition to be carried for the same weight as before. The soldier will now be able practically to carry half as much ammunition again for the Metford rifle, as he could do for the Martini-Henry.

As regards the opportunities for use of the magazine attachment which may be expected to offer themselves during field operations, no guiding regulations have yet been issued ; it may not therefore be out of place to enquire into the practice of another army with regard to this question. The tactical use of magazine fire in the German service has hitherto been controlled by a few simple rules published in their Field Exercise for Infantry. In the latest regulations, however (1889), a change of name is notified, the term 'magazine fire' being abolished, and that of 'rapid fire' substituted. This results from the fact that the rifle lately adopted is distinguished as a multiple loader, and is not considered a magazine rifle. The word 'magazine' is accordingly no longer employed in their musketry or drill regulations. In the new weapon the receptacle, which forms part of the rifle, for holding the charge of cartridges, is called a cartridge box. The charge consists of a bundle of five cartridges held together by a light steel ribbon or frame ; this is inserted from above into the box. As all the cartridges issued to the troops are in bundles of five, it follows that the employment of the rifle as a single loader is not contemplated ; it may, however, be remarked that when the cartridges are not fastened together in the box, it is possible to load with a single cartridge, but this arrangement is not to be resorted to by the soldier in the ranks.

It does not follow that because the rifle is permanently loaded for rapid fire, such fire should always be employed. The different kinds of fire will continue to be used as before, each in their proper place ; but whenever rapid fire is required

the rifle is ready for it without special arrangements for loading.

It therefore amounts to this, that what the Germans now call 'rapid fire' is what we shall, at all events for some time to come, call 'magazine fire,' as they did at first. Whether we shall eventually follow suit in this matter, and always use the magazine attachment when rapid fire is ordered, remains to be proved, but the following extract from the latest drill regulations of the German army will in any case be of interest to the reader.

'Suitable occasions for using rapid fire are :

'In the attack ; the final preparation for assault of the position.

'In the defence ; the repulse of the enemy's assault of the position.

'Repelling a cavalry charge ; and on every occasion of the fight when sudden and immediate collision with the enemy takes place (fighting about entrenchments, localities, woods, etc.).

'Pursuing fire on a retreating enemy.

'As a rule rapid fire will only be used in connection with the fixed sight ; it may be exceptionally employed at longer ranges up to 1,000 metres, when rifle fire can be brought to bear with advantage on certain objects for a brief interval, and a heavy fire is required to be opened upon them.'\*

#### ALL ARMS IN COMBINATION.

The various arms are combined, as necessity arises, for the operations of war, whenever an independent force is required. The two following are typical instances.

#### A MIXED DIVISION ACTING INDEPENDENTLY.

One regiment of cavalry, with one machine gun.

Detachment of mounted infantry, with one machine gun.

One company, engineers.

Four batteries, field artillery.

Two brigades of infantry, with four machine guns.

Ammunition column, ambulance, and departments.

\* *German Field Exercise for Infantry*, revised, 1889, p. 99.

## A MIXED BRIGADE ACTING INDEPENDENTLY.

One regiment of cavalry, with one machine gun.  
Detachment of mounted infantry, with one machine gun.  
Four battalions of infantry, with two machine guns.  
One company, engineers.  
One battery, horse-artillery.  
One battery, field artillery.  
Ammunition column, ambulance, and departments.

## THE ARMY CORPS.

The army corps is the largest distinct tactical body. Under our present organization it has a cavalry division to work with it in the field. If there are two army corps in the field army, there would probably still be only one division of cavalry ; but in such case, the cavalry division would be stronger than when there is only one army corps.

An army corps in the field is composed normally as follows :—

Three divisions of infantry,\* viz. :—

Twenty-four battalions.

Twelve machine guns.

Nine batteries, field artillery.

Three squadrons.

Three companies, engineers.

Three ammunitions columns, and departments.

Corps cavalry, viz. :—

Head-quarters of regiment and one squadron.

Corps artillery, viz. :—

Three batteries, horse-artillery.

Two batteries, field artillery.

Ammunition column.

Corps engineers, viz. :—

Field company.

Pontoon troop.

Half telegraph battalion.

Field park.

\* Detail of an infantry division is given p. 17.

Corps infantry, viz. :—

- One battalion.
- Two machine guns.
- Two companies signallers.
- Departments and police.

The detail of an army corps gives a grand total of 34,984 of all ranks with the field force, and includes 84 field guns, and 14 machine guns.

#### THE CAVALRY DIVISION.

The division is the largest tactical body in which cavalry is formed.

The war establishment is as follows :—

Two brigades, *i.e.* six regiments, with four machine guns.

Two batteries, horse-artillery.

Mounted detachment, engineers.

Mounted infantry battalion (8 companies), with two machine guns.

Ammunition column, and departments.

The strength amounts to 6,599 of all ranks, with the field force.

It is provided that when a cavalry division is working with two army corps in the field, each brigade shall consist of four cavalry regiments instead of three regiments.

#### SPACE AND TIME.

*Intervals in line.*—

|   | yards. |
|---|--------|
| Between artillery and cavalry or infantry . . . . . | 25     |
| Between infantry and cavalry . . . . .              | 24     |

*Distances in column of route.*—The same distances are allowed as intervals in line.

*Frontage.*—The above intervals must be allowed between the different arms in calculating the frontage of a combined force.

*Depth of columns.*—The depth of columns on the march composed of the various arms, can be estimated in a similar manner to that shown in the case of each arm taken separately ;

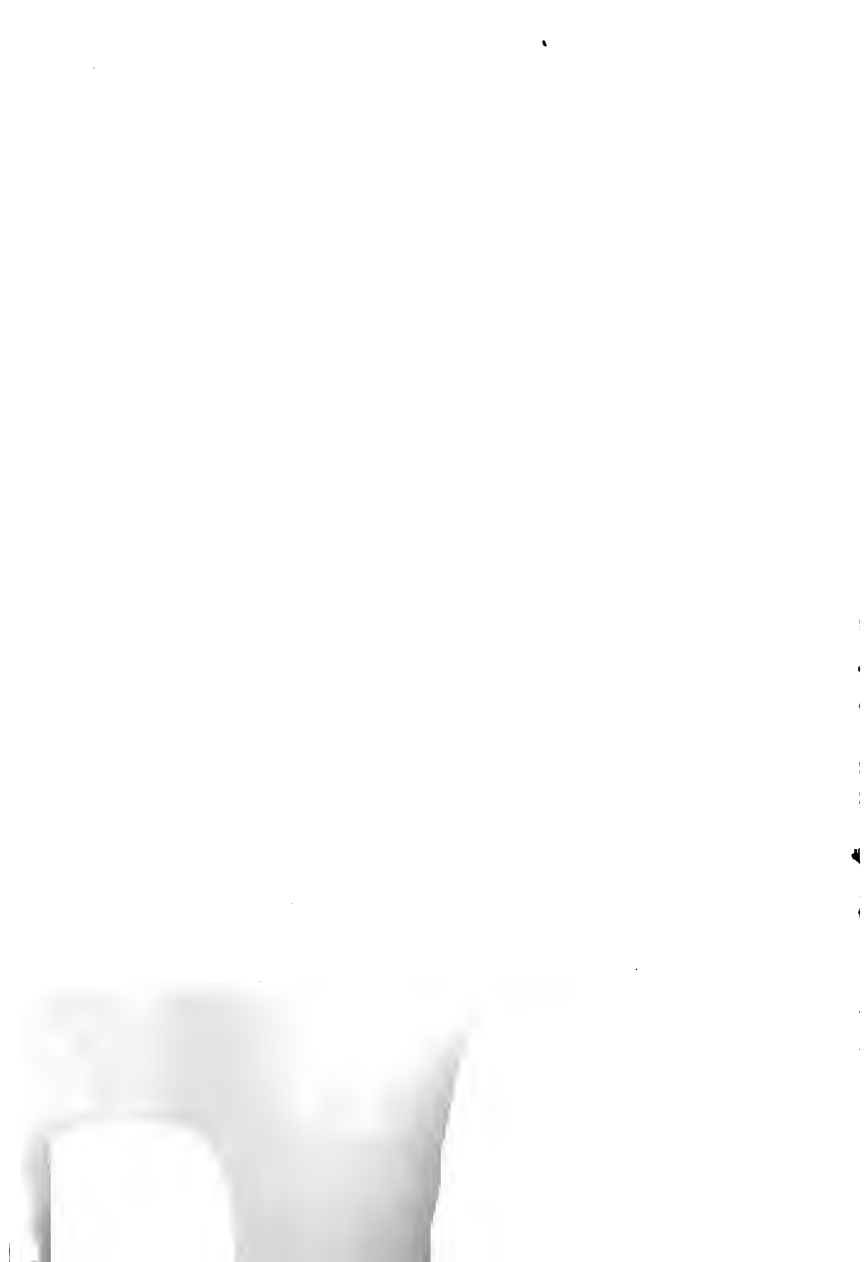


the infantry pace being necessarily assumed for the whole column. The allowance which should be made for straggling increases with the depth of the column. The following amounts are in accordance with recent regulations on this head :  $\frac{1}{10}$  for a force of about a battalion ;  $\frac{1}{8}$  for a brigade ;  $\frac{1}{7}$  for a division ; and  $\frac{1}{6}$  for an army corps.

A rough and ready rule for calculating the depth required on the road for a column, is to allow one yard for each horseman, one yard for every two foot soldiers, and twenty yards for every gun or vehicle.

*Pace of columns.*—The pace of a column of the various arms combined together, and restricted to one road, would not exceed for a force the strength of an army corps, under ordinary conditions, about 2 miles per hour. Similarly a division would not advance, as a rule, faster than  $2\frac{1}{2}$  miles per hour. Smaller columns may attain a rate of 3 miles per hour, under favourable conditions, as already shown.

Plate IV. represents a small force of infantry, cavalry, and artillery, on the line of march, and shows the length of road which it would occupy in column of route.





**EXERCISE II.****SPACE AND TIME REQUIRED FOR MARCHES AND FORMATIONS.**

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**IDEA.\***

All the bridges on the Tarbor River having been destroyed by floods except Yatton Bridge, a (Red) force advancing south pushes on a column from Clinton, to seize and hold this remaining point of passage.

A (Blue) force is advancing north from Hambden with like purpose.

**FIRST STAGE.**

*Red.*—The main column consists of two battalions of infantry (8 companies of 100 men each), three squadrons of cavalry (48 files each), and a battery of field artillery (6 guns) without wagons. The advanced-guard of the column is south of the river, and consists of three companies and one troop. The head of the main body has reached Yatton Bridge at 9.10 A.M. marching in the following order:

Two companies of leading battalion in fours,  
The battery of artillery,  
Three companies of leading battalion in fours,  
The rear battalion in fours,  
Two squadrons and a troop in sections.

On reaching the bridge the head of the column halts, and the troops in rear, which have opened out on the march, close up to proper distances. The point or leading group of the advanced-guard has just reached the southern slope of Drayton Hill not far from the Water Mill, and has touched on Blue's

\* When reading the Idea the student should refer to the small scale map of the surrounding country (given as a frontispiece, and also printed in the margin of the six-inch Minor War Game map), as well as to the special plate at the end of the Exercise.

advanced scouts. A mounted orderly is immediately despatched with the intelligence to the commander of the Red column at Yatton Bridge. The orderly leaves the south slope of Drayton Hill at 9.10 A.M. and gallops back along the road to Yatton Bridge.

*Blue.*—The advanced-guard of this force is composed of cavalry and infantry, half a troop and two companies, and the leading scouts of the advanced party of cavalry have come into contact with those of Red after crossing the Mill Brook. Part of the infantry has taken post at the north-western edge of Holm Woods, and fires across the valley at the Red advanced groups. This is shown in Fig. 1, Plate V.

In the first stage, the student is required to calculate, at what time the information of the presence of Blue would be received by the commander of Red at the bridge, and, also, to find the length of the main column, the tail of which extends along the road north of Cleveley Park.

*First calculation.*—The orderly will proceed at a full gallop, the message being urgent, or at the rate approximately of 12 miles an hour. The distance to be passed over must be pricked off the map by the student, and will be found to be as nearly as possible 1,760 yards, or one mile, from the point of departure to the bridge. The orderly will therefore take five minutes to reach the commander, and will deliver his message at 9.15 A.M.

*Second calculation.*—The length of the main column is found (omitting fractions of yards) thus:

|   | yards. |
|---|--------|
| The depth of two leading companies in fours equals    |        |
| their frontage in line $43 \times 2$ . . . . .        | 86     |
| The interval between infantry and artillery . . . . . | 25     |
| The depth of field-battery without wagons . . . . .   | 110    |
| The interval between artillery and infantry . . . . . | 25     |
| The depth of the remaining three companies of the     |        |
| first battalion, with colour party . . . . .          | 132    |
| The interval between infantry and infantry . . . . .  | 25     |
| The depth of second battalion . . . . .               | 349    |
| The interval between infantry and cavalry . . . . .   | 24     |
| The depth of two squadrons and a troop of cavalry     |        |
| in sections, $96 \times 2 + 48$ . . . . .             | 240    |
| Total . . . . .                                       | 1,016  |

As there has been a check at the bridge, no allowance for

opening out on the march need be made in this calculation. The tail of the column will therefore be about 1,000 yards from the bridge, and extend as shown in Fig. 1, Plate V.

#### SECOND STAGE.

*Red.*—The commander of the main column at the bridge, at 9.15 A.M. receives intelligence of the enemy's close proximity, and immediately orders his force to cross the river and form up to cover the bridge. He despatches an order to the commander of his advanced-guard to keep back Blue's column as long as possible, so as to give the main Red column time to take up position.

The main body is thus disposed on crossing the bridge :

*a.* The five companies of the leading battalion to hold the main road, their front being 600 yards in advance of the bridge. A half company, on each side of the road behind some fences, each supported by its remaining half company, one near the Upper Wood, and the other near the southern edge of Yatton Woods. These two companies to be well under cover. The remaining three companies in reserve on each side of the main road, about 200 yards in advance of the bridge.

*b.* The battery of artillery to take up position and come as soon as possible into action, on a knoll to the left flank about 800 yards from the bridge.

*c.* The leading squadron of cavalry to take post on the open ground to the left rear of the guns, pushing forward scouts to the edge of the hill overlooking South End Farm, and also along the roads leading to South End Bridge and to Minton. This squadron to act as immediate support to the guns, until the infantry next named (*d*) comes up.

*d.* Two companies of the rear battalion, on crossing the bridge, to move to the plantation on the left of the artillery, which they are to occupy as quickly as possible, in support of the guns and of the left flank generally. They will send forward one section to the brow of the hill above South End Farm, where cover is obtainable behind some fences.

*e.* Six companies of the rear battalion to the right rear of the main wood between Yatton and Winsley Bridges, not more than 300 yards from Yatton Bridge. These companies are in column for further disposal.

*f.* The remaining squadron and a half of cavalry to the right flank, about 500 yards from Yatton Bridge, sending forward patrols along the road to Drayton Hill.

The above positions as well as the delaying action of the Red advanced-guard are shown in Fig. 2, Plate V. It will be seen that the infantry of the Red advanced-guard lines the southern edge of Drayton Woods, having its reserve near Pawley Wood, while the cavalry worsts Blue's cavalry in a skirmish near the Pawley-Churton Road.

*Blue.*—The attempt of Blue's advanced-guard to force back the opposing force is also shown in Fig. 2, Plate V.

Having a weak advanced-guard, Blue is unable to make any progress on Drayton Hill until reinforced, by which time Red's main column has taken up position to cover the bridge, and has brought his guns into action.

In the second stage the student is required to calculate the time which it would take for the various fractions of Red's main column to form up. The movement commences at 9.16 A.M. when the leading company of infantry crosses the bridge.

*a.* The two half companies of the firing line advance to position 600 yards from the bridge, at a pace somewhat quicker than that of the ordinary march, completing their extension in 6 minutes: time 9.22 A.M.

Their supports arrive at the same moment: time 9.22 A.M.

The three companies of reserve have to march about 380 yards before their rear section of fours crosses the bridge, and their position is 200 yards in advance of the river. They consequently have to march 580 yards, which at the ordinary pace of 88 yards per minute takes them nearly 7 minutes: time say 9.23 A.M.

*b.* The battery moves at infantry pace till clear of the bridge, then disengaging to the left, gun by gun, it trots up to the knoll. The last gun has to move

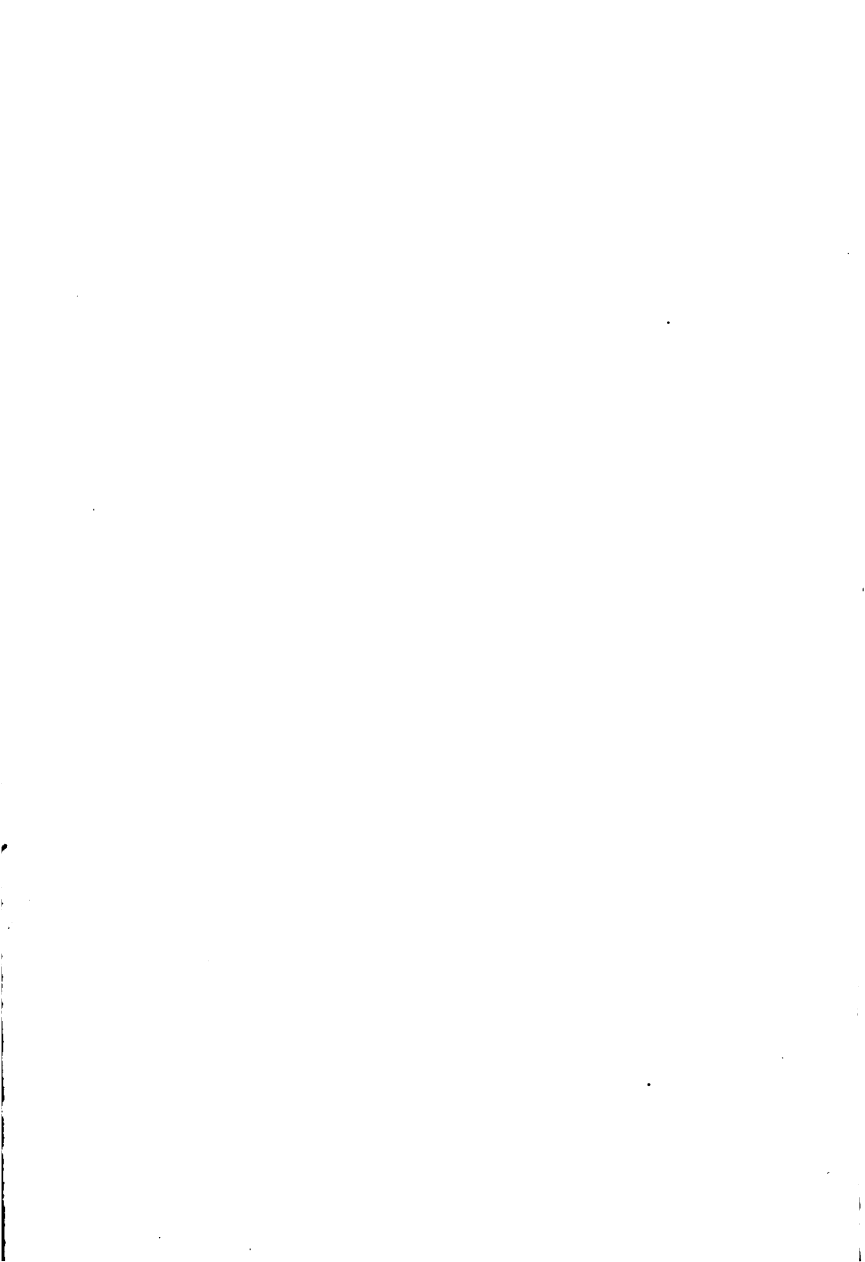
|                 | yards             | min. | sec. |
|-----------------|-------------------|------|------|
| At a walk . . . | $\frac{221}{88}$  | 2    | 30   |
| At a trot . . . | $\frac{800}{235}$ | 3    | 24   |
|                 |                   | 5    | 54   |

taking nearly six minutes: time say 9.22 A.M.

*c.* The leading squadron follows the infantry till clear of the bridge, and then, forming column of troops, trots 800 yards. The rear section of the leading squadron has to pass over.







|                 | yards             | min. | sec. |
|-----------------|-------------------|------|------|
| At a walk . . . | $\frac{872}{88}$  | = 9  | 55   |
| At a trot . . . | $\frac{800}{235}$ | = 3  | 24   |
|                 |                   | 13   | 19   |

taking a little over 13 minutes: time say 9.29 A.M.

On the movement commencing, some leading files of this squadron would be sent forward at a trot, past the infantry, to join the battery; they would gallop out to the left flank as scouts on clearing the bridge, and reach their posts a little in advance of the guns.

d. The two companies for the plantation, on left rear of the guns, march 489 yards up to the bridge, and then 800 yards to their position:

$$\frac{489 + 800}{88} \text{ yards} = 15 \text{ min.: time 9.31 A.M.}$$

e. The remaining companies of the rear battalion have to move  $\frac{752 + 300}{88}$  yards = 12 min. nearly,

time say 9.28 A.M.

f. The cavalry in rear has to march

|                 | yards              | min. | sec. |
|-----------------|--------------------|------|------|
| At a walk . . . | $\frac{1,016}{88}$ | = 11 | 30   |
| At a trot . . . | $\frac{500}{235}$  | = 2  | 7    |
|                 |                    | 13   | 37   |

time say 9.30 A.M.

#### OBSERVATIONS.

The above and similar exercises will enable the student to make calculations of the space occupied by troops, and of the time requisite for carrying orders into execution. As regards the latter, it is of the highest importance that a commander should always be able to form an accurate idea of how long it will take to complete a movement, before he directs it to be commenced.

# TABLE

## SHOWING THE ORDINARY MINOR OPERATIONS OF WAR, AND THEIR CONNECTION ONE WITH THE OTHER.

|   |          |   |   |                        |  |  |  |  |
|---|----------|---|---|------------------------|--|--|--|--|
| An ARMY in the field is always in a state of, | MARCH, { | When its security is provided for, by { | Detached bodies ;                       | {                      | Advanced-guards, Flank-guards, Rear-guards,      | {  | Infantry or Cavalry, or Infantry and Cavalry, or Infantry, Cavalry, and Artillery. |  |
|   | or       | HALT, {                                 | When its security is provided for, by { | Reconnoitring bodies ; | {  | Small or stealthy patrols, Strong patrols,               | {  | Of Infantry, or Cavalry.   |
|   |          |   |   |                        |  |  |  |  |
|   |          |   | Reconnoitring bodies ;                  | {                      | Special reconnaissance, Reconnaissance in force, | {  | Of one, two, or sometimes of the three arms.                                       |  |
|   |          |   | Outposts ;                              | {                      | Guarding, {                                      | Sentries or Vedettes, Piquets, Supports, Reserves,       | {  | Generally of all three arms.                                       |
|   |          |   |   |                        | Patrolling, {                                    | Visiting patrols, Reconnoitring patrols, Strong patrols, | {  | Of Infantry or Cavalry, Or of both combined, Or of the three arms. |
|   |          |   |   |                        | Fire-action ;                                    | Artillery fire, Infantry fire,                           | {  | Of Infantry or Cavalry.  |
|   |          |   | Shock-action ;                          | {                      | Infantry charge, Cavalry charge,                 | {  | yards from the enemy.  |  |
|   |          |   |   | {                      | Commencing at say, 50                            | {  | 50   |  |

## CHAPTER V.

SECURITY AND INFORMATION.

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SECURITY AND INFORMATION REQUISITE FOR AN ARMY  
IN THE FIELD.

No army in the field should ever be taken at a disadvantage or surprised by the enemy.

Were the whole force always on the alert it would be difficult to take it at a disadvantage, impossible to take it by surprise.

But constant alertness on the part of an army prevents that repose which is necessary to preserve it in a state of health and efficiency.

Covering detachments are therefore made use of, which, composed only of a small portion of the whole, provide by their watchfulness for the *security* and tranquillity of the main body.

Whether on the march or at the halt these detachments are always advanced a considerable distance from the main body, in the direction of the enemy, so as to give timely notice of his approach or vicinity, and, further, to oppose such a preliminary resistance to his advance as may give the main body time to prepare for attack.

Should the main body be on the march, its security is provided for in its front by detached parties forming an 'advanced-guard,' in its rear by detached parties forming a 'rear-guard,' and by 'flank-guards' on its flanks.

Should the force be halted, the covering parties are formed into a chain of 'outposts' in fixed positions.

To ensure the perfect safety of an army, however, whether on the march or at the halt, it is not only necessary to watch for the enemy's approach and to ward off his attack on the main body by advanced troops, but it is also indispensably necessary to obtain sure and accurate *information* respecting the enemy's movements.

Security and information, therefore, are so inseparably connected, that it is impossible to consider the one without the other.

Information is obtained in two ways :

- 1st. By the reports of spies, deserters, prisoners, &c. ;
- 2nd. By reconnaissance.

The consideration of the first of these methods does not come under the head of Tactics, although the same department of intelligence at head-quarters of an army in the field would receive and collate the reports from either source.

*Reconnaissance* may be defined as any movement of troops designing to observe :

- 1st. The enemy—his strength, position or movements.
- 2nd. The country—its nature and resources.\*

A reconnaissance may be made by a large force, by a small party, or by a single man.

Reconnaissances are usually effected :

1st. By detached forces of cavalry moving out far in advance of the main body.

2nd. By reconnoitring parties of cavalry, or infantry, or both, or sometimes of the three arms combined, pushed out from the main body or its advanced posts, at whatever points, front or flanks, may be necessary.

The detached forces of cavalry in advance of the main body here alluded to, besides collecting information, have other functions called screening duties, which contribute much in modern warfare to the safety of the army in rear.

\* The second part of reconnaissance is treated in the first volume of this series.

The whole of the arrangements, therefore, for security and information are as follows :

The advanced cavalry, detached for screening and reconnoitring duties, spread a veil round the force of which they form a part, and contribute to its security by the information which they obtain of the country, the scene of operations, and of the numbers, position, and probable intentions of the enemy.

Behind the screen or veil thus formed by the cavalry, the main body on the march is also protected by its advanced-guard, flank-guards, and rear-guard, the duties of which are carried out as strictly as if the cavalry were not in front, reconnoitring parties being despatched from the advanced-guard, rear-guard, or main body to examine special points, wherever thought necessary.

Similarly, at the halt, a chain of outposts is immediately formed in front of the army, with the same regularity and care as if the veil of cavalry in front did not exist.

In the case of a retreat, the circumstances are somewhat altered. The rear-guard, which in a forward march merely performs the duties of police, to pick up stragglers, &c., now becomes the most important section of the covering detachments securing safety for the army, and is proportionately stronger than the advanced-guard as being nearer to the enemy.

The screen of cavalry is now in rear, instead of in front, to ward off the harassing attacks of the enemy's cavalry and assist the rear-guard in retarding the pursuit.

But it must not be supposed that all the foregoing conditions invariably exist in combination, especially where small bodies of troops are concerned.

If there is no cavalry available, there cannot be a screen in advance, and if the ground is not favourable for the action of cavalry, infantry would be substituted for it. Or cavalry may be acting alone and have to furnish its own advanced-guard, or its own outposts, as well as its reconnoitring parties. Or infantry may be acting alone, and depending on itself for all measures of security and information.

Each possible case should therefore be taken in succession, so as to study the course of action under varying circumstances.

We have indicated that we must consider the security of an army under two conditions, viz. on the march, and at the halt.

*On the march*, then, the safety of a column of troops is secured by an advanced-guard preceding it, by flank-guards on the flanks, and by a rear-guard following it. Of these, in a forward march, the advanced-guard is the most important; it should therefore, unless in the case of a very small force, consist of not less than one-sixth of the whole marching body. The rear-guard would be about half the strength of the advanced-guard, or one-twelfth of the whole. The flank-guards, in the case of small forces, would be taken from the advanced and rear guards. Thus all the detached parties together would not, under such conditions, exceed one-fourth of the whole.

When the main force is large, the requirements of modern tactics would increase the proportionate strength of the advanced-guard, to as much as one-fourth of the whole body; but this proportion is not necessary with a small force, because it takes but a short time to deploy, nor is it advisable, as tending to produce weakness in the main column.\*

If the intention is to bring the enemy to a decisive engagement, the proportion of the advanced-guard must be large, in order to hold any good position it may have seized, until the main body comes up. Should an engagement be not desired, the advanced-guard should be no stronger than absolutely required, there being always danger of a large force so employed bringing about a general action.

\* As possible examples of the proportionate strengths of advanced-guards in ordinary country the following may be cited: A battalion on the march—advanced-guard of one company, or  $\frac{1}{4}$ th of the whole: a brigade on the march—advanced-guard of half a battalion, or  $\frac{1}{4}$ th of the whole; a division on the march—advanced-guard of two battalions, or about  $\frac{1}{4}$ th of the whole. The infantry is alone here detailed, but the other arms would be added as required.

Definite instructions upon this head should always be given by the commander of the troops, to the officer in charge of the advanced-guard.

The flank-guards with a large force would be separate bodies, of varying strength according to surrounding conditions.

In a forward march, the functions of the rear-guard are but of slight importance. We will first then direct our attention to the advanced-guard.

#### THE ADVANCED-GUARD.

The principle of the formation of an advanced-guard is that it is made up of a number of detachments, increasing progressively in strength from the front to the rear. The object of each of these detachments is to guard against surprise the stronger body which follows immediately in rear, and to give the latter time to prepare for attack.

The leading portion of the advanced-guard, called the vanguard, may be subdivided into an advanced party (furnishing centre and flanking groups), and the support to the advanced party. The functions of this part of the force are mainly to reconnoitre and to feel for the enemy. The reserve comes next; its duties are to afford resistance to the enemy's advance, or, if necessary, to force a passage for the main column, which follows the reserve of the advanced-guard at a sufficiently convenient distance.

The strength of the reserve should be from one-third to one-half of the whole advanced-guard. The remainder forms the vanguard, and may be allotted, in the proportion of about one-third for the advanced party to two-thirds for its support.

The extreme front of the advanced-guard will always consist of a centre group, or *point*, of three or four men, under a non-commissioned officer if possible, sent forward from the advanced party.

If the advanced-guard be entirely of infantry, and small, say a company as an elementary case, it may be thus divided (Fig. 1, Plate VI.). First, a centre group of four men under a corporal, flanked by two groups of three or four men each



to the right and left rear, not more than 150 yards off the main route. The remainder of the advanced party follows at 100 yards from the point.

At 200 yards, a connecting file being between, the support follows, detaching, when required, two small flanking patrols, to support and keep in sight the flank groups of the advanced party. These patrols should not as a rule extend their distance laterally from the main route beyond 400 yards. At 500 yards, connecting files being between them, the reserve follows, consisting of half the advanced-guard.

A distance of 500 yards separates the reserve from the main column, which is thus 1,300 yards, or about three-quarters of a mile, from the centre group of the advanced-guard. The last distance given is variable, the limits being 400 to 800 yards. At the maximum distance the depth of the advanced-guard would be 1,600 yards.

If the advanced-guard be entirely of cavalry, and small, say a squadron as an elementary case, it might be thus divided (Fig. 2, Plate VI.). First, a centre group or point of four men under a corporal, and flank groups of three or four men each at from 200 to 300 yards from the main route. The centre group would probably detach two of its number still farther to the front as advanced scouts. The above groups, with their connecting files, constitute the advanced party broken up. At 600 yards from the centre group follows the support, with flanking patrols, when required, about half a mile from the main route, riding nearly level with the head of the reserve. The reserve follows the support, 700 yards farther to the rear. Connecting files, double whenever possible, are between the several portions of the advanced-guard on the main route. In this case, the centre group of the advanced-guard is about 2,000 yards from the head of the column it protects.

The flanking patrols of either arm here mentioned can of course only move out when the country is open enough to allow of it. If it is so confined as to prevent this possibility, the advanced party and support are each sent forward entire, except that a leading group or point must still be in advance

of everything. In the case of cavalry, two advanced scouts would feel the way for the advanced party. The reserve always remains a complete and unbroken body.

The advanced party is usually, with small forces, under the command of a non-commissioned officer, who acts entirely under and as a subordinate to the commander of the vanguard.

The vanguard should always be under the command of an officer. He should remain on the route by which the main body is to follow, and if possible keep the whole of the support of the vanguard with him. If, however, the advanced party is broken up into several groups over a wide front, as is especially often the case with cavalry, the support may also be broken up into parties, which will each act as support to the scouting groups in their front. These groups and their supporting parties would be echeloned back to either flank. Their theoretical dispositions are shown in Fig. 3, Plate VI.

It is the duty of the commander of the vanguard to see that the proper road is followed. He must have a map and be able to read it, as the whole safety of the army in rear may depend upon the right turn being taken. He should give clear directions to the non-commissioned officer of the advanced party, and if any doubt occurs he must verify the direction himself by going to the extreme front. Should cross-roads be passed, where the main column might go astray, a man should be left to direct its march. If the officer is mounted he may occasionally proceed to points from which a good view of the country is obtained. When approaching an enclosed country where his ordinary flankers cannot work without retarding the march, he must send out special patrols, as also, if he sees signs of the presence of the enemy's patrols. The great point, however, to be borne in mind, is, that the advance of the column must not be delayed, unless when absolutely necessary. Hence it is very desirable that enough cavalry for flanking patrols should accompany the support of every mixed advanced-guard.

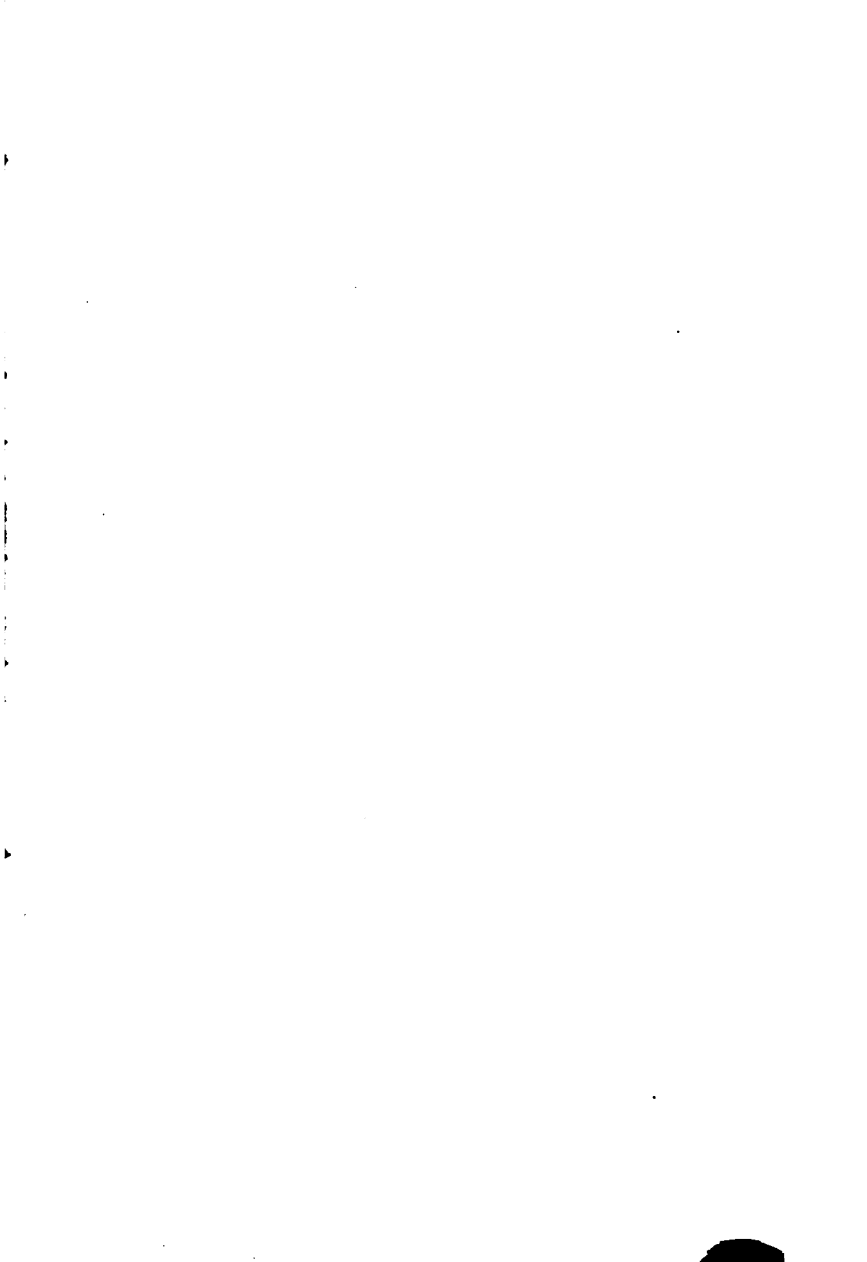
If guides are available they are attached to and march

with the support, being sent to the extreme front as may be necessary. Connection must always be kept up between the support and advanced party, and if the latter is weakened by sending men to the rear with news, it should be reinforced from the support.

The support marches at attention, on as broad a front as the road will permit.

Reports from the advanced party should be verified by the commander of the vanguard so far as possible, and it may often be desirable to let the same man who brings in the news, go on with it to the commander of the advanced-guard.

The commander of the advanced-guard remains with the reserve, as a rule, but he often has to move to the vanguard, when in touch with the enemy. The reserve marches at attention on the main route, always ready to move quickly to front or flank if required. When specially required, flanking patrols from the reserve may move on each flank. They would be employed to examine houses, farms, &c., standing back from the route, and to preserve connection with any columns that may be advancing on other roads to right and left. Should there be any fighting it is done by the reserve. The advanced parties feel, observe, and reconnoitre, but when it comes to pushing home an attack the reserve must be brought up as quickly as possible. This does not mean that the advanced parties will not usually be able to sweep back the enemy's feelers and scouts if they are encountered. So much they will doubtless be able to effect, but should more serious resistance be met with, it is their duty, even at the cost of delay, to obtain reinforcement, or to fall back on the larger body in their rear, so as either to ensure the advance being pushed successfully, or that such obstacle to the enemy's nearer approach be offered, as shall give the main body time to prepare for action. The principle on which such rules for action are based is that it is the essence of the duty of an advanced-guard to be *successful* in repulsing the enemy, or in holding him back a sufficient time. The strength of the men should not be exhausted in trifling encounters, the number of which would be never





ending, but, at cost of delay in waiting for reinforcement, the enemy should be surely met and surely held, whenever he opposes the advance.

The distance of the head of an advanced-guard from the main column varies according to circumstances, and cannot be dictated by rule. It may, however, be fairly remarked with reference to the principal duty of the advanced-guard, that if the main body requires to be afforded a long time to prepare for the engagement—in other words, if the column of the main body is deep, and would take much time to form up—the distance of the head of the advanced-guard must be a long way in advance. But if the country is difficult to traverse, and the enemy's advance can be easily retarded, the head of the advanced-guard need not be so far in front, as if the country is open, and the advance of the enemy would be uninterrupted. Or, if the advanced-guard is strong, and can hold the enemy, it need not be so far in advance as if it is weak, and liable to be driven rapidly back. Again, in thick, or foggy weather, or at night, the distance in front, of the head of the advanced-guard, would be reduced, as would also the breadth of front of the scouts, or flanking parties. Under such circumstances a long extended advanced-guard would be useless, and the proper direction of march might be lost. The enemy could also easily pass through a widely extended front, undetected, in a dark or foggy state of the atmosphere.

A very rough rule is sometimes followed, of ascertaining approximately what the distance should be from the head of the advanced-guard to the head of the main column. The distance is to be equal to the length of the column of the main body *en route*, on the assumption, that the rear of the column would then have time to form up for action, before the enemy could pass from where he encountered the head of the advanced-guard, to the position taken up by the column to receive his attack. This method, however, should only be taken to estimate the minimum distance, and in practice it will be often found that a much greater depth is necessary for the advanced-guard. In every case care must

be taken that it extends so far to the front of the force which it covers, as to enable its action to afford time to the general in command, to decide whether he will accept battle or not, and to form his force accordingly.

The two cases already given, of infantry and cavalry advanced-guards, being merely illustrations of what would be necessary as protection for small columns, where one arm only is available, we must now see what would be the disposition of an advanced-guard of all the three arms, constituted to secure the safety of a large force.

It is clear that the division of the advanced-guard into vanguard and reserve admits of a subdivision of duties which is very desirable. The nature of these duties leads us naturally to fix the position in the advanced-guard, of the several arms when combined.

Mobility is undoubtedly necessary for the advanced files, and reconnoitring their duty, cavalry must therefore be at the head ; and not only at the head but to reconnoitre to the flanks, for infantry employed on this service, to any distance, would delay the advance, and the men be soon exhausted by the extra fatigue.

The advanced party, and also the leading portion of the support, would therefore be cavalry. Mounted infantry and machine guns would follow next ; they are both useful in the vanguard, and should be ready to be pushed forward to seize bridges, or defiles, and to hold them till the infantry comes up. In a large advanced-guard the support, to fulfil its complete mission, should include some infantry ; a small proportion of artillery would sometimes be added ; a few engineers are also necessary to repair a broken bridge, or assist in removing an obstacle to the advance. The pioneers of infantry would march with the vanguard, to render like service. Cyclists and signallers are employed to keep up the communications.

The reserve would be composed of all the three arms, in order to withstand the enemy and fight him. It is headed by a small detachment of cavalry which keeps it in touch with the vanguard. The order of march will be, the mounted troops, then artillery, followed by machine guns and the in-

fantry ; lastly engineers not with the vanguard, ammunition reserves and ambulance.

The circumstances under which guns would require to take a more forward place in the march of an advanced-guard are of rare occurrence. A couple of guns are sometimes of use with the vanguard, in order to clear the road in front without loss to the infantry, but, as a general rule, they are close enough to the front when with the reserve. We have seen that guns cannot come into action, without serious risk to themselves, under the effective fire of infantry. Hence, if too near the front on meeting the enemy, the guns would be inconvenienced by the proximity of hostile infantry. But slight delay is caused by their marching with the reserve, and thus disposed they undoubtedly have a greater choice of positions, all within artillery range but beyond infantry range on coming into action, than if they occupied a more forward place in the column of route.

The typical formation of an advanced guard to a division acting independently, is shown in Plate VII.

#### THE ADVANCED-GUARD APPROACHING A VILLAGE OR TOWN.

Many of the minor tactical details incidental to the march of an advanced-guard will be discussed in a future page under the head of Reconnoitring, but special attention must be drawn to the distinctive duties of an advanced-guard on approaching and entering a village or town.

On coming within sight of the village the advanced-guard halts on the main route, while the advanced party, preceded by its point, moves on to reconnoitre. The point is pushed forward well to the front, and at the first houses outside the town an inhabitant must if possible be seized, to give information. A youth or intelligent child will be often more likely to tell what is required than a grown-up person. Should there appear, from the answers obtained from inquiries or from the preliminary reconnaissance made by the point, any suspicion of the enemy's presence, the village must be turned by a portion of the advanced party, or by the support if necessary, and entered simultaneously by the front and on a flank.



If the village appears to be unoccupied the point must at once enter, so that there may be no delay. The method of doing so will depend upon the instructions the commander of this group has received. Should the enemy's scouts or patrols be in the vicinity, he may have been ordered to secure the entrance to the village on the farther side. In this case, as soon as he perceives the patrols are not in actual occupation of the town, he would rush with his party up the main street, and seize upon the farther outlet. On the other hand, should there be no immediate necessity for this action, the commander of the point would probably have been instructed to advance into the village quietly and with due precaution.\*

The flank groups of the advanced party would also move up, and enter by the flanks, or by any side roads or streets.

The point making signal to the rear, to the effect that all appears safe, the advanced party closes up rapidly to its proper distance. As it enters the town, patrols are detached up any lateral streets or roads, always keeping up their connection with the centre.

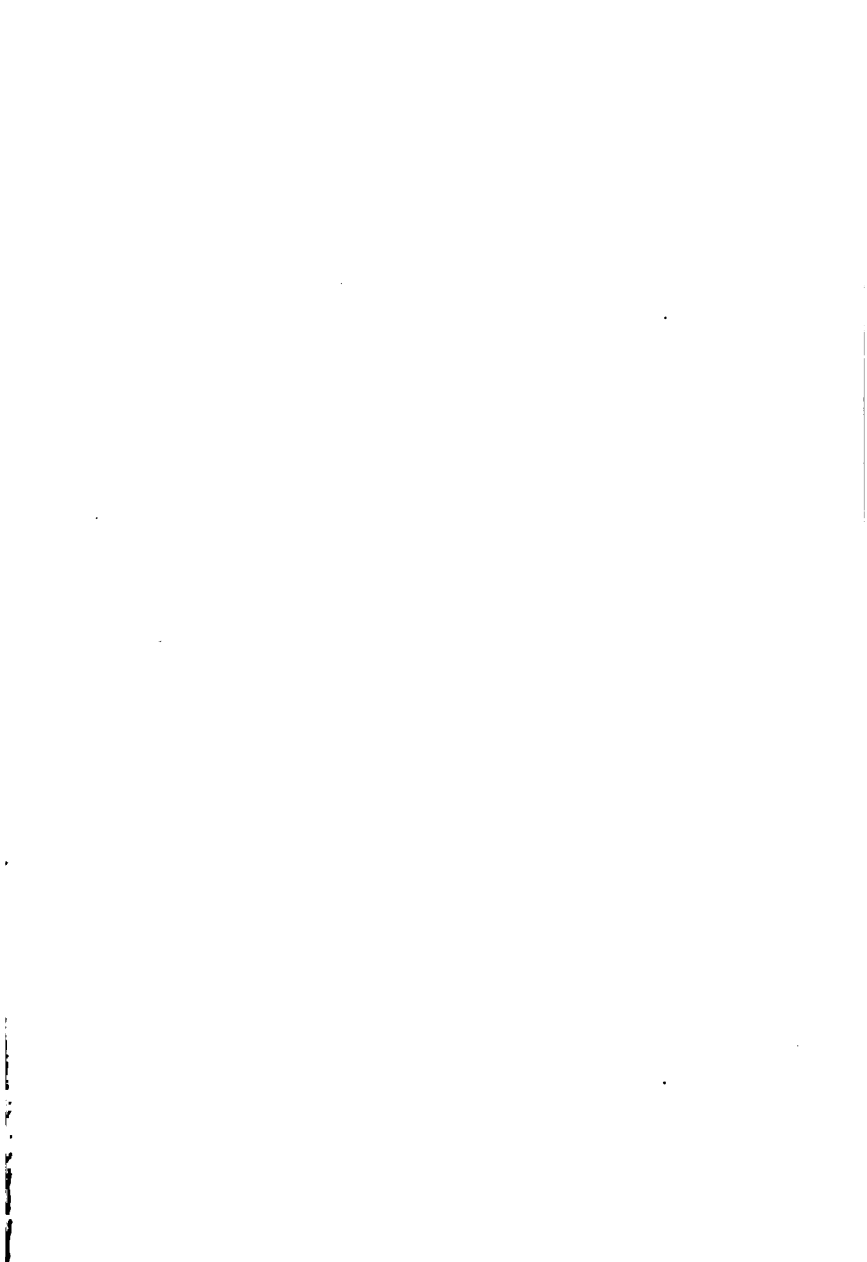
The commander of the advanced party seizes on the telegraph and post office, with all papers found therein. Should there be a railway station it is also held, and men are specially told off to stop communication up or down the line. All telegraph wires are disconnected, or joined together and partly run to earth, in order to confuse the signals.

The chief man of the village, or postmaster, having been found, is handed over to the commander of the vanguard on his arrival, together with the documents seized. All information required is obtained from these and other sources.

Should there be occasion for it, the points necessary for defence of the town are at once occupied, but, otherwise, on arrival of the commander of the advanced-guard, the reserve of which has halted at the entrance, the order is given for the column to resume its march, when the point or centre group again takes its position as pioneering patrol of the whole.

By night, the operations of the leading portion of the

\* Vide p. 168 the method of passing through a village recommended for a small patrol.





advanced-guard would be conducted in a similar manner, but the distances separating the different parties from one another would be less, and the patrols would not get so far from the main column.

The march should, if possible, be so regulated that the village or town, the position of which is known by the map, may be reached a little before daybreak. Great care must be taken by the advanced scouts in passing the outlying houses, not to rouse the inhabitants prematurely by noise which might set the dogs barking. Some person should first be seized from whom intelligence can be obtained.

Should the village be occupied in any force, the earliest information of this will probably be obtained by the advanced scouts of the point, who, being a considerable distance in front, come upon the enemy's sentries or vedettes outside the town. The point, immediately upon this discovery, should fall back unperceived, the leader running back with the news till he meets the commander of the advanced party. The latter communicates the information to the rear, and the officers of the vanguard and reserve coming up, the former with his support, a reconnaissance, secret or open according to circumstances, is now made of the village, to see if the enemy really occupies it. This is commonly done by a strong patrol working round to one flank, which can first reconnoitre, and finally force the village, if necessary, from that quarter, combining with a front attack of the advanced-guard.

#### FLANK PATROLS OR GUARDS.

When small forces are on the march detached parties furnished by the advanced- and rear-guards, patrol on the flanks. They complete the circle of defence within which the main column safely advances.\*

These detachments are represented by separate bodies specially provided, called flank-guards, when large forces are in question. Flank-guards are organized on much the same

\* See THE MARCH OF A FLANKING PATROL given in the chapter on Reconnoitring, p. 173, as an illustration.

principle as advanced-guards, and their strength and composition depend on the character of the work laid out for them, and on the nature of the country in which they have to act.

If a flank march has to be undertaken for tactical or other considerations, without notice or preparation, the advanced- or rear-guard nearest to the enemy will at once assume the position of flank-guard on the exposed flank ; a fresh advanced- or rear-guard being detailed as soon as possible, to guard the front or rear of the column as the case may be.

#### MARCH OF THE MAIN COLUMN.

When the enemy is met with, the notice of his approach given by the advanced-guard to the main column will not, in all probability, enable the latter to prepare for attack with sufficient readiness, unless the order of march of the column has been regulated with a view to this contingency. Thus, in a forward march, when the enemy is known to be near at hand, the various arms should be so disposed in column of route as to be enabled to be brought up, with least delay, in the order in which they would necessarily come into action. A small detachment of cavalry has been furnished by the advanced-guard to march intermediately, so as to preserve touch with the main column. This detachment precedes the column, which is headed by a small portion of infantry, just sufficient to protect the artillery, as the guns being required from the earliest moment of a modern engagement should be close to the front. The guns would march all together (excepting such as may be with the advanced-guard), sometimes without their wagons, but more usually with one wagon to each gun. The artillery are followed, first by the infantry machine guns, and next by the infantry, as this is the arm which must come at once into position to check the enemy's advance. A portion of the engineers would be with the advanced-guard to clear away obstacles or repair a broken bridge ; but the remainder, with the necessary tool wagons, would probably march immediately after the infantry, where

they would not be too far from the head of the column to be made quickly available in case their services are demanded. The cavalry of the force is probably all with the advanced- or flank-guards, but, if any remains, it must be given a place next in the column; it is, however, fatiguing to horses to follow men on foot, and whenever possible cavalry should move independently. If this cannot be arranged, a good distance should be left between the infantry and the cavalry columns. Finally, the remainder, or all, of the artillery wagons, the ammunition reserves and the ambulance, supply, and baggage wagons, would bring up the extreme rear. A small rear-guard, assisted by a detachment of military police, would follow the main column.

When the enemy is at a distance the comfort and convenience of the troops can be considered, and each arm may be given a separate route, as the rate of march in each case is different. When a choice exists the simple rule is to give infantry the shortest road, cavalry the softest road (it may also be the longest on account of superior pace of this arm), and artillery and train the hardest or best road.

From 12 to 15 miles a day is good marching for a force of the size of a division; anything over 20 miles is considered a forced march.

There should be a short halt of from 5 to 10 minutes every hour during the march. A long halt of about 30 minutes (sometimes extended if a meal is to be taken) may be given half way, when the march takes from 3 to 5 hours to execute. If the march is still longer in duration, a long halt every two hours may be allowed with advantage.

## EXERCISE III.

## ADVANCED-GUARD AGAINST ADVANCED-GUARD.

## IDEA.\*

The advanced-guard of a small column (Red) on the march from Hambden *via* Garrads Cross to Upper Bascombe, comes in contact with the advanced-guard of a similar force (Blue) on the march from West Enton *via* Glenfield to Wolverton. The strength of the two main columns is about equal as regards infantry and cavalry, but Red is very superior in artillery, Blue having only one battery, two guns of which are with his advanced-guard.

## Strength of the advanced-guards:

| <i>Red.</i>            | <i>Blue.</i>           |
|------------------------|------------------------|
| Infantry, 3 companies. | Infantry, 3 companies. |
| Cavalry, 1 troop.      | Cavalry, 1 squadron.   |
| Two guns.              | Two guns.              |

The cavalry of each advanced-guard is furnished with appliances for destroying bridges.

During some late operations Glenfield Bridge has been rendered more or less impassable, part of the arch having been destroyed.

## FIRST STAGE: 8 A.M. to 8.5 A.M.

*Red.*—On nearing Rainham Hill, the point, or centre group, has been pushed on well to the front, and its advanced scouts

\* When reading the Idea the student should refer to the small scale map of the surrounding country (given as a frontispiece, and also printed in the margin of the six-inch Minor War Game map), as well as to the special plate at the end of the Exercise.

have reached the far crest. The two flank groups are right and left, while the remainder of the advanced party, (half a troop in all), has just reached the plateau. The support, (half a troop and one company), is 500 yards in rear, having crossed Stanton Bridge. The reserve, (two companies and two guns), follows at 500 yards, while the main body at a further distance of 700 yards is nearing South End Bridge.

The advanced scouts of the point are thus 2,000 yards from the main column.

On reaching the far crest of the hill, the chief of the centre group makes out, with his glass, Blue scouts advancing up the common towards Five Roads Cross. He signals to the rear, and the commanders of the advanced party and of the vanguard come up. At the same time the left flank group bring in a boy, whom they have found near Rainham Wood. On being questioned by the officers the boy informs them that Glenfield Bridge is partly broken down, but that it can still be crossed by people on foot. The commander of the vanguard, on hearing this, orders the leader of the advanced party to take his half-troop on at once, for the purpose of completing the destruction of Glenfield Bridge. The cavalry advances at a trot, and at 8.5 A.M. has reached the common, passing by the Royal Arms Public-house.

*Blue.*—The point of the advanced-guard has arrived at Five Roads Cross. The left group moves up the hollow road on the flank to Ashdown Hill, which it reaches at 8.5 A.M. The point remains at the cross roads to receive the signal of this party. The right flank group is 300 yards to the right rear, while the remainder of the advanced party, (half a troop in all), is close behind on the main road. The support, (half a troop and one company), is 400 yards from the point, and the reserve, (two companies, one troop, and two guns), follows at 500 yards' distance. The main body is 1,500 yards from the point of the advanced-guard.

On the left flankers reaching the high ground east of the cross roads, they catch sight of the party of Red cavalry which has just reached the common. Signal of 'enemy in sight' is made to the commander of the advanced party who has reached Five Roads Cross, and the point is accordingly sent on to reconnoitre.



## SECOND STAGE: 8.5 to 8.15 A.M.

*Red.*—Blue's mounted men on Ashdown Hill are now made out, and also a party at Five Roads Cross. The commander of the advanced-guard arriving on the heights orders up his guns, which are still south of Stanton Bridge, and determines to hold Rainham Hill, his instructions being to secure the passage of the Tarbor River for his main column. He approves of the attempt to destroy Glenfield Bridge, as the stream is probably not fordable on account of recent rains, and the enemy will thus be restricted to passage at the more distant bridge farther down the stream.

He despatches the half-troop of cavalry from the support towards Garrads Cross, for his line of advance being in that direction it is very necessary to prevent the march being headed when resumed.

At 8.10 A.M. the company of the support arrives, and is placed to line the north edge of Moor Cope, and some fences on the other side of the road farther east, in continuation of the same line.

Meantime the half-troop of cavalry of the advanced party, which has reached the common, forms up into line as it gets on to open ground, breaking into a gallop as it does so, and, skirting the east of the town, reaches Glenfield Bridge in a little over two minutes. The bridge is found to be partly destroyed, but still passable for infantry. Half the party immediately dismount, a few of them with carbines to protect the remainder while engaged in the demolition. Blue's centre group perceive the movement towards the bridge as soon as the Red cavalry is clear of the houses; they advance at a gallop to resist the attempt but are too late, and being received with the fire of some of the dismounted men on the south bank are obliged to fall back. The remainder of the dismounted men are pioneers, and provided with gun-cotton. The brickwork of a portion of the arch which is left being exposed, they are enabled to fix the charge at once, and succeed in blowing it up in four minutes, thus completing the destruction of the bridge.

The party now remounts, when the commander perceives that Clip Bridge is in the hands of the enemy, and that Blue cavalry is crossing it in force. Red falls back on Glenfield pursued by Blue, until the latter is checked by the fire of Red's guns, which arriving on the plateau of Rainham Hill are brought into action

at 8.10 A.M. at a range of about a mile from Clip Bridge. Blue cavalry, which now consists of the leading groups of the advanced party reinforced by the half-troop of the support, retires to west of the town, while the Red cavalry halts near the Royal Arms.

At 8.14 A.M. the reserve of two companies comes on to Rainham Hill, and is posted 200 yards in rear of the extended company.

*Blue.*—As the centre group pushes forward from the Five Roads Cross to reconnoitre, the chief perceives a party of Red cavalry emerge from among the scattered houses east of the town, and advance at a gallop towards the bridge. Signal is passed to the rear, and the group at full speed endeavours to reach the bridge before Red, but is unable to do so. The latter receives Blue with a sharp fire of carbines from some of his dismounted men, and although more of the advanced party come up to assist the group, Blue is unable to save the bridge. The advanced party then all crosses at Clip Bridge, and is shortly joined by the half-troop of the support, but, as has been seen, the Blue cavalry is unable to cut off the Red cavalry although superior in force, and has ultimately to fall back to the south-west of the common, where the ground near the foot of the hills defilades it from artillery fire.

The commander of the advanced-guard on arrival at the cross roads, bringing up with him part of the cavalry of the reserve, finds the half-troop of the support gone on to Clip Bridge, and the company of infantry following the same route. He orders up the two guns and the remainder of the troop of the reserve. The guns arrive and are brought into action at 8.14 A.M., on an underfeature of Ashdown Hill, east of the cross roads. Half a troop of the reserve cavalry is with the guns. The other half-troop has been sent on at once by the commander to follow the support, and it gets to Clip Bridge by 8.15 A.M. Here it is enabled to cross, as the attention of Red's artillery is diverted for the moment from the bridge, by the opening of fire from the Blue guns.

#### THIRD STAGE: 8.15 to 8.20 A.M.

*Red.*—By the commencement of this stage the whole advanced-guard is in position, and the two guns have been in

action for five minutes, four of which without reply on the part of Blue. The cavalry sent out towards Garrads Cross is in observation to give early information of any movement in that quarter, having scouts on the hill near Hanley Wood; but Blue's advance seems to be directed upon the other flank. His cavalry, which has just crossed Clip Bridge, joining the leading troop, forces the Red cavalry, which has moved forward to the south of Glenfield Church, to fall back, but following too far in pursuit, Blue comes under infantry fire from Moor Copse, and is forced to retire in confusion.

By the end of the stage the principal portion of the main column has safely crossed Stanton Bridge, and has taken up a defensive position on Rainham Heights. The guns of the main body, reinforcing those of the advanced-guard, soon silence Blue artillery, although the four remaining guns of the enemy's battery have joined the others upon the lower slope of Ashdown Hill.

The Red guns then open on the head of Blue's main column of infantry, which appears near the cross roads.

The Red advanced-guard, being thus liberated for another forward movement, proceeds towards Redburn Hill, to co-operate with the artillery action, and to prevent Blue from attempting to occupy the high ground in that quarter.

*Blue.*—Blue continues to endeavour to pass his force over Clip Bridge, the company of the support arriving there at 8.18 A.M. Being, however, exposed to flanking artillery fire in this movement, he is obliged to desist on the Red guns being reinforced.

The guns on Ashdown Hill are joined by the four remaining guns of the battery, but are nevertheless soon forced to withdraw in the presence of Red's superior fire.

The head of the Blue main column has by this time advanced up the common nearly to Five Roads Cross, but the error made by the advanced-guard in not securing Redburn Hill is now apparent, and the march is directed thereon by way of the hollow road already mentioned.

#### OBSERVATIONS.

In this exercise is seen the advantage to be derived, from scouts and advanced groups being well to the front when an





advanced-guard is nearing dangerous ground. On approaching a tactical point, such as a river to be crossed, a line of heights to be occupied, or a commanding position to be seized, the extreme feelers of the advanced-guard should be pushed on farther to the front, and the whole held in readiness to follow up immediately any advantage gained thereby.

Red, by receiving timely information of his adversary's approach, and by being ready for immediate action, was enabled to secure the passage of the river for his main column.

Blue failed to appreciate the tactical importance of the ground about Redburn Hill in his preliminary advance, and it is extremely doubtful whether his movement in that direction at the end of the third stage, in the face of superior artillery fire, could meet with any success.

Blue's preponderance of cavalry with the advanced-guard, which should have been an advantage to him in an open country, was of little avail, owing to that arm having been kept back till too late for efficient action.

## CHAPTER VI.

SECURITY AND INFORMATION (*continued*).

We must now consider the duties of the covering detachments of an army when it is *at the halt*.

An army or force has halted after a march, and, whether the intention is to remain for a brief time or a long, it must at once protect itself by advanced covering detachments, called outposts. The advanced-guard, which has already halted a considerable distance in front of the main body, naturally assumes the duties of the outposts. This arrangement enables the troops to take up their outpost positions while the main column is still on the march, but if the advanced-guard has been much harassed during the day's march, fresh troops would be sent up in relief from the main column; until their arrival, the advanced-guard must continue to hold the ground. The distribution of the parts of the outposts corresponds generally with that of the advanced-guard, and their duties have much of the same character, but in matters of detail and their mode of execution many essential differences demand the special attention of the military student.

We have already alluded to the advanced force of cavalry which covers the front and flanks of an army in the field. Behind this screen the outpost line would be formed as an additional protection, but its functions are simple and few so long as the cavalry remains in advance. Should the cavalry be driven in, or should the enemy break through the advanced screen at any point, the outpost line is ready for action, and the enemy is arrested in his progress at sufficient

distance from the main body to enable the latter to prepare for battle.

In the event of there being no outside cavalry cordon or screen, the outpost line is the sole protection to the main body at the halt, and becomes of the fullest importance from the very first.

#### OUTPOSTS.

It was formerly laid down by military writers that outposts have two distinct and separate functions—one to secure the safety of the corps which establishes them—and the other to reconnoitre and obtain information of the enemy's movements and dispositions.

The second duty, however, as it should be carried out, is not a distinct function of equal importance with the first. Outposts should not attempt to reconnoitre farther than is necessary for the proper execution of their main duty, which is to secure the safety and repose of the troops in rear. Information so far as can be obtained of the enemy's movements and even of his intentions, by careful watching, by observing indications, and by patrolling, within certain limits, should be eagerly sought for by the outposts, and the troops detailed for these duties should at the same time check attempts made by the enemy to spy out weak points of the position; but if reconnaissance is required of a more extended character, it should not be carried out by the general outpost line, but by special parties pushed forward from the main body, sometimes from the reserve of the outposts. Such work is well suited to cavalry, but occasionally infantry must be employed.

The duties of the outposts may be taken to be as follows, in order of importance:

1st. To check the advance of an attacking enemy, for such time as will ensure the safety of the army, by enabling it to prepare for action.

2nd. To secure repose for the army by the assurance of immunity from surprise, and by checking reconnaissance on the part of the enemy.



3rd. To obtain such information about the enemy as may be necessary in carrying out the foregoing duties.

There is no service in the field in which infantry and cavalry can be more usefully united than that of outpost duty. Infantry are necessary to give resistance to the advance of an enemy seeking to approach the position; cavalry are required to search for the enemy in front and collect information of his movements, as well as for the rapid transmission of intelligence to the rear. Mounted infantry when available would also be included as part of the outposts. They can be used offensively when forming strong patrols, or defensively to command outlying points of approach with their long-range fire. In these duties machine-guns will also be employed with good effect.

Artillery if added would usually be with the reserve, when the guns should be posted so as to cover the retreat of the advanced portion of the outposts, or else be held in readiness close to a main route to proceed at once to any required point as the attack of the enemy develops itself. Guns are, however, occasionally more to the front, when, without unduly risking their safety, they can be placed so as to command ground, bridges, &c., which must be passed by the enemy in his advance. The enemy may thus be forced to lose time by deploying when still at a considerable distance. The guns posted near the front line should be safe from surprise, and either out of range of the enemy's effective rifle fire, or protected from it by skirmishers thrown out in advance of the guns. With proper precautions an artillery outpost may often be placed in an advanced position, preferably on a flank, where, being well covered by the guns of the main body, it need not retire until it has accomplished its object, supporting the infantry as they fall back from point to point. For this and all other purposes of delaying the enemy, however, advanced guns must avoid taking position within artillery range of ground which the enemy's batteries could reach and take post on unperceived.\*

\* Hamley *On Outposts*.

Horse-artillery acting with cavalry may sometimes, if well supported, be pushed still farther to the front, for the purpose of making the enemy develop his attack early in the day.

In deciding the relative proportions of infantry and cavalry for outpost duties, in a mixed force, the nature of the country must be taken into consideration. In a close country infantry is more suitable; in an open country cavalry from its mobility possesses the advantage of being able to cover a large extent of ground very quickly. Whenever the country is suitable cavalry in any case undertakes patrolling duties, but if the enemy is near infantry should be within reach, to cover the retreat of cavalry if the latter is driven back.

Cavalry may, on occasion, be usefully combined with infantry, by watching the more advanced positions of the outpost line; being sent, for example, to occupy high ground as a look-out station, or to patrol beyond it, or on the far side of enclosures, too distant to be held by infantry. The infantry line would in such case be continued in rear, as if the cavalry were not watching the front.

In all such dispositions, however, great care should be taken not to fritter away the strength and efficiency of cavalry, by imposing upon it duties which it ought not to be asked to perform. To the infantry clearly belongs the duties of watching at all fixed posts, to the cavalry whatever observation has to be done on the move.\* Cavalry should therefore be utilised as far as possible only for patrolling work, and should not as a rule, even if the country be suitable, be called on to furnish piquets, whenever infantry forms part of the force and is available for such duty.

#### DIVISION AND VARIOUS DUTIES OF THE OUTPOSTS.

The authorised instructions lately revised in our service for both infantry and cavalry outposts are clear and full, and their careful perusal by the student is strongly recommended. The outposts are divided into three portions:

\* *Cavalry in Modern War.*

1. The piquets, including sentries, or vedettes, patrols and detached posts.
2. The supports to the piquets.
3. The reserve of the outposts.

Each of these bodies will so far as possible consist of complete units under their own officers, and it is specially directed that piquets and their supports be furnished from the same corps.

The force employed on outpost duty should never be larger than is absolutely necessary, a maximum of one-sixth of the whole force being seldom exceeded. Should necessity arise for a larger proportion being temporarily employed, the extra duty should be reduced again as soon as possible, in order to avoid overtaxing the strength of the men. Nor should a commander, at any time, so employ more men than the duty absolutely demands.

When the force to be covered is small, or when the main body bivouacs in a defensive position where it can quickly form into order of battle, the reserve may be sometimes dispensed with. In the Peninsular War inlying piquets were generally substituted for reserves, as the men remaining in camp until required to turn out had thus less hardship to undergo, and the duty fell less severely upon them. The introduction of arms of precision and long range has no doubt greatly altered these conditions, and the distance to which the outpost line must now be pushed forward is consequently more extended than in former days. Hence the greater necessity now for an intervening body of reserve troops. Yet the practical difficulty on service, of providing reserves without unduly harassing the men, must ever remain the same. It is therefore a question whether it would not still be well to continue to make use of the inlying piquet, in cases where a reserve of some kind could not be dispensed with, but where the distance was not too great for it to remain in camp until required to act.

There are two systems of outposts which are known as the *Cordon system* and the *Patrol system* respectively, a combination of the two prevailing with us. By the first

system a line of sentries prevents any passage whatever on the part of the enemy ; by the second system constant patrolling in front of the outposts prevents the passage of bodies of the enemy even if it does not completely bar the way to individuals. The difficulty of continuing the cordon system in its entirety during the night or in foggy weather is recognised in our service, great reliance under such circumstances being placed upon standing patrols, sent forward in direction of the enemy, the various avenues of approach being held by double sentries with their piquets close to them ; thus forming a chain of advanced groups, sometimes moving sometimes stationary, on all the roads or paths, strengthened in their rear by the piquets and supports in fixed positions. The piquets are connected by visiting patrols passing from one to the other.

There may be exceptional cases, when the enemy is close and pressing, in which, notwithstanding the arrangements thus detailed for watching and barring his approach at night along the roads, it may also be desirable to post an inner cordon of sentries round the camp or bivouac. This would keep off any small force of the enemy which might penetrate the outer line, for the purpose of reconnaissance or of harassing the main body, and would secure repose and safety to the camp.

#### POSTING OF THE OUTPOSTS.

The officer in chief command appoints an experienced officer to act as commander of the outposts, and informs him in the first instance of the general object to be effected by the outposts, which is dependent on the general idea or situation of the force at the time. Everything known of the enemy is also told to him, and the general line to be taken up by the outposts is named. The commander of the outposts at once proceeds to determine the measures which are to be taken, and as a preliminary step decides how far the line of resistance should be in front of the force to be covered. Even in the absence of a personal inspection of the ground, he can decide this approximately by reference to his map, and by knowing the time necessary for the main force to

prepare for action. A line of observation in advance of the line of resistance is next looked for in the map, a ridge of hills, the bank of a river, or some marked features of ground being usually selected. The position for the reserve, in rear of the line of resistance or supports, would then be chosen, and the officers in command of the supports and piquets be shown the general dispositions thus arranged. The strength and composition of the reserve can also be determined, and the supports marched off in the general direction of the ground they are to occupy. The number of the supports will depend chiefly upon the number of main approaches to be watched, and each support should be strong enough to furnish the piquets necessary to guard its own front. The reserve is finally marched, by the commander of the outposts, to the spot selected. Both the supports, and the reserve, should advance with great caution, preceded by scouts.

The commanders of the supports, having proceeded a sufficient distance to the front, select positions for their supports, and send forward therefrom the piquets intended to cover the front.

The commanders of the piquets advance to their ground with still greater care, the enemy being possibly close at hand. Having halted their piquets, in rear of the line of observation, they post their line of sentries, tentatively at first, with a view to cover the front rapidly and establish communication at once from one flank to another of the line. The line itself can be altered or corrected subsequently by the commander of the outposts, if it be necessary, and the piquet commanders should then conform thereto and make final corrections of the positions of their sentries. It is usual for the whole of the outposts to remain near their arms on the alert until the arrangements are completed.

If the outposts are to extend over a large front, the line would be divided into sections, of from one to one and a half miles for infantry, and three miles for cavalry, in each section. A field officer would be in local command of a section, and the commander of the outposts would in such case give his

instructions, in the first instance, to the section commanders, who would proceed to carry them out. The field officer of a section commands the supports and piquets in his section. The commander of the outposts always retains charge of the reserve.

#### SENTRIES.

Each piquet furnishes a chain of *sentries* by day to watch the country in front, and to connect with the neighbouring piquets. Cavalry sentries being mounted are called *vedettes*. Infantry sentries are, according to the features of the ground, placed in pairs or in groups, at a distance from the piquet of from 100 to 400 yards. When posted in pairs the reliefs of each double sentry are with the piquet, where they have generally more protection against the weather, and can obtain greater rest between their turns of duty. In the other case the sentry is accompanied to his post by the remainder of the group, forming his relief, who lie down close behind him, but in such a position as not to be seen by the enemy. A single sentry thus suffices when the group is used by day. At night the sentries are always double. The group would therefore consist of from three to six men. A non-commissioned officer is placed in charge of from one to three groups.

By using groups the fatigue incurred in relieving sentries is avoided and there is a saving of men by day. In a close or wooded country where surprise is possible, and especially in irregular warfare, the sentries much prefer the group system, which gives them a feeling of increased confidence.

Cavalry *vedettes* are posted either as double *vedettes*, relieved from the piquet, and at a distance of about 600 yards from it, or in groups which in this service are called *cossack posts*. A *cossack post* has only one *vedette*, his relief, in charge of a non-commissioned officer or the senior soldier, being posted close to him. Numbers are here again economised; there is a saving of work for men and horses and concealment as regards the position of the piquet, by the use of these posts. They are most suitable for places difficult of access from the piquet, or where a *vedette* cannot be seen from the piquet or from the next posts.

No more sentry posts should be established than are absolutely necessary. In fairly open ground by day they may be from 200 to 400 yards apart for infantry, and up to 600 yards apart for cavalry. It may sometimes be necessary for the double sentries of an infantry post to patrol in turn towards the post next to their own, for purposes of better observation ; this should, however, only be done when there is no danger of exposure to the enemy's view, as it must never be forgotten that the first maxim for a sentry of observation is to see without being seen. The men of a double vedette post may with advantage be from 20 to 30 yards apart from each other, near enough to communicate when required but not to encourage conversation.

Sentries or vedettes should have clearly in view the men of the posts on each side of them, and no ground in front of two adjoining posts should be unseen by the sentries of both posts. Sentries as a rule should not fix bayonets by day nor on bright moonlight nights, as the glitter of polished metal is seen farther than even the brightest colour and always attracts attention, but as a safeguard against surprise they should invariably do so on dark nights or in thick weather. Vedettes have their carbines drawn, loaded, and at the advance. The lance flag of lancers should be removed or furled. At night sentries should be placed so as if possible to bring any advancing person against the skyline, they themselves remaining in shadow ; but as it is impossible to continue the cordon system with strict effect at night, sentries or vedettes would in general be only placed on the roads, and other lines of approach.

The sentry posts furnished by each piquet should be numbered continuously from the right. The men should be relieved every two hours by day and every hour by night.

*Connecting sentries.*—The communication between double sentries or groups and their piquets, and between advanced detached posts and the chain of sentries, is kept up when necessary by single connecting sentries. With cavalry the duty is performed by a mounted sentry, but detached posts of this arm being usually at some distance, would have to be connected by patrols.

*Sentry over piquet.*—A look-out sentry should be placed at the piquet, whose business it is to watch the double sentries, or the sentry connecting the piquet with them, and to call attention to any signals they may make or to any unusual occurrence. With cavalry this sentry is dismounted by day, mounted by night.

*Detached posts.*—When it is necessary for purposes of observation to occupy a post, to which access from the piquet is difficult, or the distance of which is beyond the limits laid down, or there is an exposed flank which requires to be specially guarded, a detached party of from three to twelve men, may be sent out under an officer or non-commissioned officer, and form a piquet on a small scale. Such a post should be relieved about every six hours. The sentries should be quite close in front of the party, for infantry; the vedettes may be some distance in advance, for cavalry. Detached posts should light no fire under any circumstances. The men, if of infantry, should wear their equipment, and have their rifles always beside them as they sit or lie on the ground. If of cavalry, one half of the men should only dismount at a time, unless the enemy is known to be at a distance.

*Examining post.*—On the principal main route, or on each of them if there are several, a party consisting of an officer, or of a selected non-commissioned officer, and six men, may be stationed to examine all persons wishing to pass through the piquets. The commander should if possible speak the language of the country. On the approach of any persons, one sentry would advance and halt them, at a distance from the line sufficient to prevent the piquet posts being overlooked. The other sentry on the post transmitting the information to the commander of the examining party, the persons are either interrogated on the spot where they stand, or else blindfolded before being allowed to penetrate the lines. Should they be deserters or suspected spies, they must be immediately forwarded to the commander of the outpost, without any preliminary questioning. Great care should be taken that by sending persons to the examining party along the line of sentries, opportunities for spying out



what is to be seen be not afforded to the enemy, otherwise the practice would be of very doubtful value. Should there be no examining party, the officer of the nearest piquet will receive the report of the approach of any one to the lines.

#### PATROLS.

Patrols from the outposts are in our service of three kinds :

1. Visiting patrols,
2. Reconnoitring patrols,
3. Strong patrols.

*Visiting patrols* consist of an officer, or more usually a non-commissioned officer or old soldier, and one or two men. They are sent out from each piquet between reliefs, and their duties consist in keeping up the communication between the piquet and its neighbouring piquets, as well as with its support in rear, and with its detached parties in advance. They test the watchfulness of the sentries or vedettes, aid them in case of sickness or wounds, or in examining doubtful objects from a fresh point of view, and bring back their reports. In visiting a chain of sentries an infantry patrol would first communicate with the nearest sentry of the next piquet on one flank, and then, proceeding along the front of the line of sentries, touch on the nearest sentry of the piquet on the other flank, returning by the rear to its own piquet. A cavalry patrol, if the ground were exposed, might preferably move altogether in the rear of the line of vedettes.

Visiting patrols are especially necessary in a close country and in bad weather. In an open country, with clear weather, they may be much less often sent out during the day. If the line of sentries furnished by the piquet can be observed from some point of vantage near at hand, a non-commissioned officer being frequently sent there, to report on the appearance of things, may enable some of the daylight rounds to be dispensed with. The reliefs must be employed as visiting rounds, should the piquet be short of men for the duty.

*Reconnoitring patrols* are sent forward a limited distance, not exceeding from half a mile to a mile for infantry, in advance, to examine ground which cannot be watched by the sentries, and to give notice of the enemy's approach. They consist of an officer or non-commissioned officer, and from two to seven men according to circumstances. Cavalry may be despatched to a much greater distance than infantry, and are more suited to the service. They may safely go four to five miles to the front, and if they do not touch on the enemy within that distance, may extend their search as far as even ten miles. The Germans and French call the smaller of these patrols by names which signify crawling or creeping in the case of infantry, and secrecy in the case of cavalry. We have no appellations to express these meanings in our service.

*Strong patrols* are of the same character as the last, but of larger force and not necessarily secret. If of greater strength than a dozen men they would be furnished from the supports or reserve. Sometimes a company or troop, or even a larger body, would be despatched on such duty. They should not proceed farther than about a mile for infantry, from the line of sentries, and even then with mounted orderlies attached, for the purpose of conveying information rapidly to the rear. The object of strong patrols would generally be to obtain early information of the enemy's movements when he is at a distance, to ward off his patrols, and to prevent surprise; sometimes to engage a post, in order to ascertain the enemy's strength, thus acting on the offensive. In such case mounted infantry might be added to cavalry to form a suitable force, and special instructions would be given for guidance of the commander. Strong patrols sent on reconnaissance duty should avoid unnecessary firing. Firing signifies, to those in rear, that the patrol has not only seen the enemy, but that the enemy has seen the patrol and is advancing. An incessant fire, kept up in retiring, intimates that the enemy is in force and pressing the pursuit, but this signal should be abstained from unless it is necessary to arouse the troops in rear; the outpost line must be most

careful not to occasion false alarms, which are hurtful to the *morale* of the army.

As a general rule, in the absence of orders to the contrary, it would be best to retire steadily, if possible unperceived, as soon as the enemy is touched upon; but sometimes, if opportunity serves, a prisoner or two may be captured, in order to obtain information.

#### PIQUETS.

The strength of a piquet will be determined by the number of posts for which it furnishes sentries or vedettes, in addition to the men required for detached posts, and for patrolling duties. The piquet acts as a support, or sort of anchor, to the sentries, vedettes, or detached parties which it furnishes. It is therefore posted in their rear, if possible centrally, and on a main route or thoroughfare. A mounted orderly or two should be attached to an infantry piquet. Sentries or vedettes are placed double, with the exception of those furnished by groups or cossack posts, of the sentries over the piquets, and also of connecting sentries or vedettes. For each double sentry post in three reliefs six men will be required, for each single sentry post three men. Patrolling duties must always be allowed for, the number of men required being determined by the commander of the outposts according to circumstances; with cavalry piquets the proportion would generally require to be large, not less than one-third of the whole piquet. Detached posts are of a strength proportioned to the duty upon which they are sent. Thus a party to furnish one sentry, for a point advanced from the general line, might consist of four men, the senior being in command. If the sentry is to be double, six men, under a non-commissioned officer or senior soldier, would be necessary. Again, if a bridge on a flank, for instance, had to be guarded, the party might consist of a dozen men, under an officer or sergeant. This strength would allow of a double sentry beyond the bridge, and of vigilant patrolling on the far bank of the river.

The requirements thus indicated being known, the strength of any piquet can be calculated, and if the numbers first allowed prove insufficient, reinforcement can be furnished subsequently from the support.\*

We have stated that sentries should not be more than 400 yards, and vedettes not more than 600 yards, in advance of their piquets, and that while the posts of sentries may be as far as 400 yards apart on moderately open ground, those of vedettes have a maximum interval of 600 yards, under similar conditions. From two to four double sentries are quite sufficient for an infantry piquet to furnish, and two to three double vedettes for a cavalry piquet. It follows that the infantry piquet would observe from 600 to 800 yards of front whilst the cavalry piquet would watch a front of 1,000 to 2,000 yards. The piquets themselves may be from 400 to 800 yards from their supports in the case of infantry, and from 1,200 to 2,000 yards in the case of cavalry. Infantry piquets would thus be from 600 to 800 yards from one another, whilst cavalry piquets would be from 1,000 to 1,600 yards apart (*vide* Plate IX.).

These figures are of course purely approximate, as the nature of the ground and other circumstances must immensely affect the dispositions in any particular case; in a perfectly open country, in clear weather, for instance, the distances and intervals would no doubt be much increased, and fewer men would be required for purposes of observation; this would also be the result if groups or cossack posts were used either wholly or in part. The principles of calculation, however, hold good, and ought to be borne in mind. The

\* To prevent misconception it must be stated that this calculation is only made use of in practice to guard against the numbers allotted to a piquet falling below its actual requirements. It is commonly necessary to allot more men to some if not all of the piquets of an outpost than are necessary for the bare duties, in order that the front line may have sufficient strength for preliminary resistance should the enemy attack. The strengths of the piquets, Figs. 1 and 2, Plate IX., are calculated on this basis; the numbers given also include connecting sentries and detached posts not shown in the diagram.

piquets, whilst being placed centrally as regards their sentries, should be close enough to aid and support one another in retreat, an efficient flanking fire being mutually provided for in the case of infantry. They should not be too close in front of their supports, as the latter might in such case be demoralized by the piquets being suddenly driven in upon them, nor, on the other hand, too far distant to prevent the supports from advancing in time, to aid the piquets when hardly pressed.

From 25 to 50 men for infantry, and from 25 to 30 for cavalry, are generally sufficient for ordinary piquets. Where large detached posts are furnished by a piquet, its strength must be proportionately increased.

A piquet should be, if possible, posted on the route by which the enemy will probably advance, and a cavalry piquet should have ground in advance of its position favourable for action, in case it may be necessary to take the offensive in order to check the enemy. The position of the piquet ought to be so far concealed, that the enemy can only discover it by attacking ; but there must be free movement in all directions, and especially easy means of communication, both with the flanking piquets and with the supports in rear.

As a rule piquets when stationed at bridges, defiles, or small villages, should be posted on the near side, the far side being patrolled or guarded by sentries if the distance is not too great. Woods thinly planted, if they come into the line of observation, may often be occupied by both cavalry and infantry piquets. There must, however, be a clear view to the front from the extreme edge, along which, in such case, the sentries or vedettes should be placed, the piquets being posted in the wood not far to the rear of the line of sentries. If the wood is very small, it may perhaps be included between two sentry posts, pushed each of them far enough forward on opposite flanks of the wood, to enable the sentries of one post to see those of the other post across the front of the wood. This arrangement would avoid the necessity of placing either sentries or piquets inside the wood. If the sentries cannot be so posted both piquet and sentries must

be retired some distance to the rear of the wood, which should in such case be frequently visited by patrols. In a much-wooded country it may occasionally be necessary for the outpost line to run through the centre of a forest or large wood ; in that case the line of resistance should approximate closely to the line of observation, as but short notice of the enemy's approach can be given by the sentries. If it be possible, some marked line, such as a road or stream, or the crest of a line of hills traversing the wood laterally, should be selected for the cordon of sentries ; the piquets ought, in this instance, to be many and weak rather than few and strong, and the group system of posting sentries would be most suitable.

A piquet should not be posted in a house, or enclosed yard or garden, and a cavalry piquet especially must take care not to occupy any position which would cramp its movements on being attacked.

It is desirable that any crossing or joining together of the roads which lead from the front should be in advance of the piquet, and any road passing the flank to the rear should be viewed with suspicion and carefully watched.

Unless the flank of a line of piquets is secured by impassable ground or a natural obstacle, such as a swamp or a river, the flanking piquet must be thrown back ; it should furnish a detached post to prevent a turning movement of the enemy, frequent patrolling being also kept up on the exposed flank.

If part of the front of a line of piquets is covered by impassable ground or an obstacle, such as a swamp or broad river, the sentries may here be few, observation being carried on by patrols. All men employed on outpost duty are more or less deprived of rest, therefore they should never be unnecessarily numerous.

As a rule piquets are not allowed to light fires, their food being sent up from the rear ; but if fire is permitted, it should be carefully screened from observation, and so arranged that neither light nor smoke can betray its position. When no friendly wall, bank, or other cover, enables it to be well

concealed, the next best precaution is to have close by a heap of wet sods or earth, with which the fire can be put out at a moment's warning. An alarm post for night will always be fixed a short distance in rear of the fire, so as to compel the enemy in advancing to expose himself by any light that it may give. The men of an infantry piquet pile arms, and they are all, or part at a time, usually allowed to remove their valises, every man retaining his own valise close beside him when taken off. None of the men should stroll to a distance from the arms. The horses of a cavalry piquet are always kept saddled and bridled, with the exception of a few at a time, the saddles and numnahs of which may be shifted during the day so as to ease their backs. In all cooking, eating, feeding, and watering arrangements, two-thirds of a piquet of either arm must always be ready for immediate action, but when not on patrol or sentry duty the men may be allowed to smoke. As regards sleep, as many as possible should be permitted to repose during the day, but at night all should be on the alert. To prevent confusion piquets are numbered from a flank by the commander of the outposts.

#### SUPPORTS.

We have stated that the piquets are detached from the supports, they should therefore both come from the same corps; but in a mixed force, of course, troops of another arm might be added to the supports. In such case cavalry would only be employed with the supports where the ground was very open, and where they could efficiently assist in retarding the advance of the enemy by offensive movements. Under ordinary conditions, the main brunt of the resisting action of the supports must fall on the infantry.

Supports should be of a strength equal to all in front of them, and one support to every two or three piquets will be sufficient.

The line of resistance, or defence—that is, the line where the first important stand is to be made—having been decided upon in the first instance, the supports are usually posted

thereon, as centrally as possible to their own group of piquets in front, and close to or on the main avenues of approach.

The position taken up by the supports should be the best line for mutual defence. One part of it should not be much stronger than another, as the enemy might break through at the weak part and take the other part in reverse. In a large outpost the field officers of sections remain with their supports, when not inspecting the front of their line.

We have given the ordinary distances of the supports from the piquets, but in some cases, where the best line of resistance for infantry would appear to be close in rear of the best line of observation, the supports might be posted immediately in rear of the piquets, or even on the same ground.

The strictness of routine laid down for the piquets may be somewhat relaxed in the case of the supports ; but they must be always ready to march, day or night, at a moment's notice, to any point required, or to stand on the defensive. The supports can generally light fires and do their own cooking as well as that for the piquets. If no fires are allowed, cooked food must be sent up from the reserve, or else the piquets and supports must be satisfied with the cooked rations which they carry in their haversacks. When practicable, however, hot food of some kind should be provided for outlying troops. The horses of cavalry supports must be kept as available for action as those with the piquets.

#### RESERVE.

The reserve is intended as a general support to the lines of piquets and supports. It consists generally of from one-third to one-half of the whole strength of the outpost. This leaves, for the supports and piquets, either two-thirds or one-half of the whole. The subdivision, therefore, in the one case, would be, for the reserve one-third, for the supports one-third, for the piquets one-third ; in the other case, for the reserve one-half, for the supports one-fourth, for the piquets one-fourth, of the whole strength.



The reserve ought to be placed out of sight of the enemy, occasionally divided into two parts, on a principal route or routes of retreat to the main body.

Its functions are to move to the reinforcement of the supports if necessary, or to occupy a good defensive position for the troops in front to fall back upon if required.

The distance from the line of supports must vary considerably according to circumstances, but would range under the more ordinary conditions from 400 yards to 800 yards for infantry, and from 1,200 to 2,000 yards for cavalry.

The reserve may bivouac, rest, cook, eat, and smoke, but should always be ready to act at the shortest notice.

Plate X. illustrates the disposition of an outpost line, divided into two sections, one flank resting on an obstacle.

#### SMALL POSTS, OR GROUPS, OF FOUR MEN.

It is very desirable that the commander of an outpost line should have every latitude afforded him, in making such arrangement of his available troops as may best suit the ground which he has to guard. In *very close and rugged country* if the sentries and piquets are disposed in the fashion above laid down, it cannot but result, that great difficulty will be experienced in placing the former, so that they should be in sight of their neighbouring sentries and of their piquets, and be also posted in such positions as to be easy of access from the piquets in case of need. It might therefore in some cases be advisable to adopt an alternative daylight formation, either for a portion or the whole of the outpost, it being understood that the circumstances are such as to render strict observation on the cordon system necessary. In order to give the first line more security, and to enable its component parts to afford each other mutual support, the line of sentries, in pairs or in groups, and the line of piquets which supply them, may be replaced by one line of groups of four men each, furnished direct from the supports. Each of these posts would be commanded by a corporal or old soldier, who would form one of the four men. The remain-

ing three men of the party would furnish the relief for the sentry, who would be posted in the best look-out position, at from 10 to 50 yards to the front. The men not on sentry would remain with the commander, sitting or lying down, well hidden from view, keeping constant watch upon their sentry or look-out man. One of their number may be occasionally sent to patrol to the next post, if not more than 100 yards off, but the regular duties of patrolling would not be undertaken by the posts of four men but by the supports. The sentry should be relieved every hour, the post every six hours, and during their tour of duty all should preserve strict silence and neither eat nor smoke.

Each support might furnish from four to six of such posts, the farthest of which in very close ground such as described should not be more than 300 yards from the support.

The disposition would not of course be so solid or deep as the ordinary formation, for one of the advanced lines would be dispensed with altogether; on the other hand, the ground under consideration would doubtless present special capabilities for defence of some compensating value.

It is evident that by this method close ground might be better watched by a less number of men. Thus in the example given in Fig. 1, Plate IX., where 2,400 yards of front is supposed to be guarded by 480 infantry, half in reserve, with a line of double sentries at intervals of 300 yards, the ground could be observed by 400 men, half in reserve, with a line of 24 posts of four men, furnished from four supports, having intervals of 100 yards only between the small posts. It will also be observed by Fig. 2, Plate IX., that the same extent of front, under the ordinary rule, with intervals of 200 yards between posts of double sentries, would require a strength of 600 men.

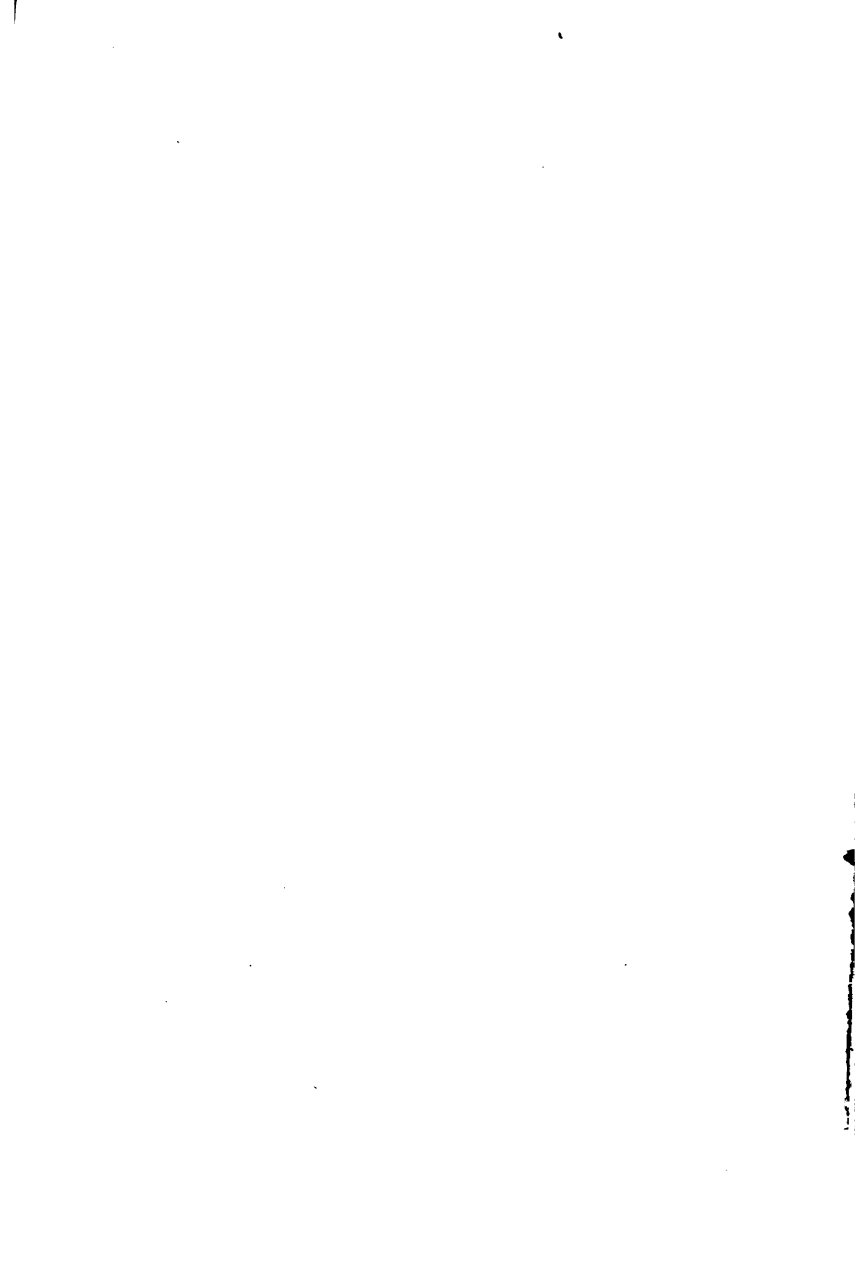
The method might further be followed upon *comparatively open ground*, when the force of available infantry is not such as to render resistance as well as observation possible, and no cavalry is available. Thus, in the example already taken, 2,400 yards of front, which requires at the lowest calculation, that shown in Fig. 1, Plate IX., to be guarded by 240

men, when divided into three lines, exclusive of reserve, could be on occasion observed in the manner suggested, by 100 men in two lines, furnishing twelve posts with two supports. The reserve would consist if possible of 200 men; thus 300 infantry could attempt observation of the ground, which it would take, at a very moderate calculation, nearly 500 men to watch and guard with the ordinary formations.

Here the ground being open the groups of four men might be 500 yards from their supports, and sometimes the flanking posts must exceed that distance; in such cases a connecting post would be necessary. The reserve should be placed in rear of the supports as usual. It would consist of from one-half to two-thirds of the force employed, the proportion being increased in consequence of the weakness of the front lines.

It would not of course be necessary for a commander, making use of the foregoing disposition, to adopt it for his whole line. On the contrary, he would often find it better to combine this method with the ordinary one; for instance, if one portion of the line of resistance was necessarily coincident with the line of observation, groups of four men furnished direct from the supports, would probably here be more suitable than a line of piquets supplying sentries, backed up quite close by supports; yet at another part of the line where greater depth was to be found, the normal formation of piquets and supports would be best. All rules laid down for the posting of outposts should be elastic, and subject to modification or alteration, in accordance with the special conditions presented for consideration. With this view, the above sketch of a possible formation of the front line may not be uninteresting to the student or to the commander.\*

\* The reader desirous of inquiring more into the advantages and disadvantages of this system is referred to Rustow's *La petite guerre* (French trans. from the German). The posts of four men are there called 'postes à la cosaque.' They are recognised also in the French Infantry Regulations, *Instruction pratique sur le service de l'infanterie*.





## THE OUTPOST LINE AT NIGHT.

Changes in the position of a portion of the outpost line will usually become necessary at night. They should be carefully arranged before dark, and put into execution just as the light is failing so as not to be observed by the enemy. Bridges, main routes, and obligatory points of passage should be occupied by the piquets, the supports, or portions of them, being pushed close up to the piquets. Advanced sentries being of little use during the dark hours, except on the roads, footpaths, and other avenues of approach, the number of double sentries in a close country can usually be reduced at night. If extra men are thus set free they should be employed on patrol duty, which must be more frequent in the front line as the double sentries are fewer in number. On the other hand, in a comparatively open country, the number of approaches to be watched may even exceed the day posts. Here there would be no saving of sentries, but patrolling between picquets would not require to be so incessant. The outpost line would not be brought nearer to the main body which it covers, at night, unless for some very special reason. In any such exceptional case the original post would be resumed on the approach of daybreak; this should, however, be effected with as much care and preliminary examination of the ground as at the previous occupation.

With a mixed force whenever possible cavalry would continue its patrols at night on the main routes, but its vedettes must undergo a thorough change of position. The posts with wide extended view suitable for the cavalry vedette by day are valueless at night, and stationary mounted men can only watch roads or defiles after dark.

Cavalry piquets which have been in open ground during the day must now be placed on the roads, where they can have free movement from front to rear, double vedettes being immediately in front of the piquets, advanced a short distance up each approach. Principal reliance must be placed upon the watchfulness of the patrols, which are kept constantly in motion during the night. The enemy can only himself move

in any force upon the roads ; and if these are vigilantly watched and examined for some distance to the front during the dark hours, by parties which carry out the twofold duties of reconnoitring patrols and look-out posts, a certain amount of security against surprise is thereby obtained.

In considering the arrangements for night service of the outposts, it will be seen, that without some additional protection in the extreme front, it would often be necessary to fall back at dusk from a position, which presents some advantages during the day. An officer in command is naturally loth to give up, without a struggle, ground favourable to himself, which might thus be occupied during the night by the enemy. In order that he may be enabled to hold on to his position, and be forewarned with absolute certainty of any move on the part of the enemy, with a view of meeting it, a number of standing patrols or *patrolling posts*, of four men each, may be pushed forward at dusk, traversing all roads or possible approaches by which the enemy could advance in force, his movements at night being necessarily confined to such routes. We have said that the piquets would hold the obligatory points of approach, and this should be done as far to the front of the outpost line as possible ; the supports would be stationed close up to them in rear. If a sufficient number of patrols, of four men, are employed in the manner suggested, the piquets which supply them will be weakened, so that the supports must close up upon them, in order to hold strongly the points of passage. The patrolling posts being sent along every possible path or line of advance in the direction of the enemy, should give the earliest notice of any attempt at advance on his part. The distance to which they should proceed would much depend upon circumstances, but it should be so regulated as to enable notice of the enemy's advance to be sent back, either by messenger or by preconcerted signal, in time for the piquets and their supports in rear to prepare to receive him. When the whole of a support has reinforced the piquets in its front, a portion of the reserve would move up to take the place of the support at its former post.

With a view to the service being performed to the best advantage, the leaders of these patrols should be chosen with care, and they should have instructions to act quite independently of each other, moving or watching with their party as may seem necessary, but always in observation or reconnaissance of the route, which is placed as it were in their special charge. Where the distance, to which it may appear desirable to push forward the posts, exceeds 1,000 yards, the duty would be better discharged by cavalry than by infantry; and even under that distance when infantry is employed, it would be a wise arrangement to have a mounted man or cyclist, to follow a short distance in rear of each patrol of infantry, for the purpose of taking back intelligence quickly to the piquets.

Should the patrols, on arriving at the named limit of distance from their piquets, find suitable positions for observation, either upon or immediately to one side of the route, they will establish themselves therein, and place a sentry or vedette in front on the look-out, relieving him every hour or half hour. At the end of the third hour the post may be relieved from the piquet or from the support, the relief in such case advancing along the route which is under charge of the party, until it finds it.\* It will thus be observed, that the patrolling post must never leave the route which it has to watch, or its immediate vicinity, although it may change its position thereon as often as desirable. If relieved it will return to the piquet or support. The posts thus established in advance should not unnecessarily alarm the troops in rear; but if an undoubted advance of the enemy takes place they should retire firing, so as not only to give notice to the rear, but also to offer all possible preliminary resistance to the enemy's leading troops. The latter, not knowing in the darkness what force may be opposed to them, will probably delay their advance to feel

\* Should the circumstances be such, as must frequently be the case, that the piquets and patrolling posts have equally to remain on the alert, there would not be much advantage in relieving the latter at all during the night.



the way more cautiously, and thus afford time to their opponents.

If the patrolling posts, detached upon such duty at night, keep perfect silence, and show no lights whatever (with this view the men not being permitted to smoke), they will probably see before they are seen, and run but slight danger of being cut off.

At daybreak the patrolling posts might make a reconnaissance before rejoining their piquets and report what is to be seen of the enemy.\*

#### DUTIES OF THE COMMANDER OF AN INFANTRY PIQUET.

An officer placed in command of a piquet should provide himself with a field-glass, a compass, a map, a watch, a notebook, a pencil, and some sketching materials of simple character.

He receives detailed instructions, from the commander of the outposts, or from the field officer of his section, according to circumstances, which he must note down. These orders indicate the hour at which he is to mount piquet, the ground he is to watch, approximate position of the piquet with those also of the neighbouring piquets and the supports, the amount of resistance the piquet is to make if attacked in superior force, and in the latter case the general dispositions the officer is to make, together with his line of retreat.

It is further shown where he is to send his reports, and whence he is to be supplied with any camp requisites or provisions. Lastly, where the piquet is to be posted at night, with the night positions of neighbouring piquets and the supports.

\* The method here detailed of securing immunity from surprise during the night, is by no means new. Marshal Bugeaud recommended and practised a similar system in the earlier part of this century, an account of which will be found in his *Aperçues sur quelques détails de la guerre*, 1831. It appears to have been first tried in our army some years back in India. The method is now virtually sanctioned in both our infantry and cavalry services (see *Infantry Drill*, 1889, p. 264, and *Cavalry Regulations*, 1887, p. 458).

Before moving off, the officer makes an inspection and rough nominal list of his men, examining their arms, ammunition, and rations. He should see that each non-commissioned officer has a pencil and paper, or note-book of some kind, with him.

On passing beyond the line of supports the piquet should advance with great caution, moving with scouts out in front, and flankers according as the ground permits. The commander should note any position which may be useful for making a stand in the retreat, and impress upon his mind the general formation of the ground he passes over. Arriving a little in rear of his intended line of observation, the piquet is halted, and the officer proceeds with an extended patrol to work up to the ground. He is followed by a party under a non-commissioned officer, to furnish the first relief of sentries, which, as it advances, opens out by files, so as to cover approximately in extended order the whole of the ground allotted to the piquet to guard. On arriving at the line of observation, without having seen anything of the enemy, the officer halts, letting the patrollers go on to the front to examine any suspicious ground within short rifle range. As the extended party of sentries comes up to him, the officer posts them by files, tentatively at first, wherever there appears the best look-out. Should a good place for distant observation be found on an eminence, the top of a house, or of a high tree, a couple of men are immediately established there. They should have a glass if one is available.

The officer next communicates with the piquet on one flank, and then with the piquet on the other flank, passing along his line of double sentries in so doing and correcting their positions, if possible reducing the number of posts, or replacing some by groups with a single sentry. He should place himself exactly in the position of a sentry before deciding whether or not the man is posted to the best advantage, and he should see that the sentries understand, and are able to answer, three questions.

1. *What is known of the enemy?* Early information on

this point should invariably be communicated to all the men on piquet.

2. *Where are their own piquets—detached or advanced posts if any—and the other sentries?*

3. *Where do the roads within sight lead to?*

Von Arnim gives these three questions, as those most practically useful on service, out of a mass of other matter which is often laid down as necessary for sentries to know. Should they also be acquainted with the names of their own immediate commanders, it would no doubt be an advantage.

Finally, two or three simple signals, such as are laid down in the Drill books, should be impressed upon the sentry, as the best means of communicating what he sees or observes to the piquet, or to flanking posts,\* and the general direction to which his attention should be devoted had better be practically marked out for him on the ground by a row of stones or a few pegs.

The above arrangements being completed, the commander returns to his piquet, and moves it if necessary to a more suitable position. He then piles arms, and posts a piquet or look-out sentry, sending a report of his preliminary dispositions to the commander of the outposts.

Should detached posts, or an examining post, require to be furnished from the piquet, the commander will now detail them. He will also direct his second in command with reference to any entrenchment or temporary strengthening of the piquet post which may appear desirable, and as to the patrols which are to be sent out. He might then visit any detached post and assure himself that it is in the best possible position, and that the connection with the main line is well kept up. If it be a post of importance, such as to guard a flank, he will see that proper reconnoitring patrols are sent out and that, if necessary, the post is strengthened so as to prevent a sudden rush of the enemy upon the sentries. Bridges, however, are not to be broken down without distinct orders, nor should main roads be

\* These signals are referred to more in detail in Chapter VII. p. 164.

blocked up with material that cannot be cleared away for a forward movement if required. At the post itself lateral communication should be attended to, gaps if necessary being made through banks or hedges, and the line of retreat should be quite clear.

All reports and information obtained by the commander of the piquet, are at once to be forwarded to the officer commanding the outposts, and mutual information of the enemy's movements should be given to one another by the piquets and supports.

The commander of a piquet should consider what he would do if attacked, and form his plans, communicating them to his subordinate officers. Much will depend upon the conditions of each case and upon the special instructions which he has received ; but as a general rule, if the enemy advances vigorously upon the outpost line during the day, the commander of an infantry piquet ought at once to reinforce his line of sentries so as to cover his front with an extended firing line, which should retire slowly upon the general line of resistance or supports, taking every advantage of the ground already studied on marching out, in order to obstruct the enemy. On nearing the supports the commander of a piquet should direct his retreat upon one flank of his own support, so as not to mask its fire, and then co-operate with it in defence of the general line. Whilst retiring the piquet must look to the piquets on its flanks so as to move in correspondence with them.

In the more exceptional cases where the first stand is to be made at the line of piquets, the commander would have probably received instructions to strengthen his post by every means at his disposal, and he would continue to hold his ground on the enemy advancing, his sentries falling back upon either flank of the piquet. The support would now be brought up to the assistance of the piquets, the whole retiring in one line as soon as the position becomes untenable or the flanks commence to be turned.

At night if posted on a line of approach he will usually barricade the route, leaving a passage clear for patrols out

in front to get through in returning. If he has grounds to expect an attack, a portion of his piquet may be kept under arms during the night. If the enemy should advance the bayonet is the best weapon to use; if fire is delivered it had best be by volleys.

An officer on piquet should, if possible, make a rough sketch of his post and the adjoining ground. This is especially desirable when the post is to be occupied for some time. Any information obtainable should be written down.

#### DUTIES OF THE COMMANDER OF A CAVALRY PIQUET.

The officer placed in command receives and notes his instructions in a similar manner to that detailed in the case of an infantry piquet. In addition to inspecting the men he examines carefully the horses of his piquet and sees that the forage they are to carry is sufficient. He also ascertains whence he is to receive such further supply of forage as may be necessary. He then marches off his party, covered by advanced and flanking patrols, to about the centre of the ground he is ordered to take up, halts a little in rear of the position, tells off his piquet, and sends out a reconnoitring patrol to the front, as well as a visiting patrol to establish communication with adjoining piquets. About two-thirds of the piquet will probably be required for vedette duties and about one-third for patrols. He selects the sharpest-sighted men for vedettes, and the most intelligent as well as the best-mounted men for patrols. The vedettes are divided into three reliefs. The first relief of vedettes, and a non-commissioned officer, with one or two orderlies, move out of the ranks, and accompany the officer. The piquet remains mounted under the second in command, the advanced and flanking patrols being on the look-out. The officer now endeavours to get on some height from which he can view the ground, to decide if cossack posts or double vedettes will be most suitable. The central post is first placed, and then the flank vedettes, as quickly as possible, defects in their positions being subsequently corrected. Before returning to his piquet, the officer gives the most

precise instructions and every information to the vedettes, questioning them to see what they know, and taking care that they understand the signals they are to make use of.\*

As soon as the vedettes are posted, the advanced and flanking patrols are withdrawn.

On rejoining his piquet the commander selects a proper station for it, and allows the men to dismount, unless the enemy is close at hand, when it may be advisable that half the piquet should remain mounted. A look-out or piquet sentry is posted, and also, should it be necessary, a mounted sentry to connect the latter with the vedette posts.

The visiting patrol sent out having returned, the commander of the piquet sends a report to the rear, showing how many vedettes have been posted, where they stand, the position of the piquet, and any information brought in by the patrol. If possible, a rough sketch should accompany the report.

Reconnoitring patrols, consisting of about three men each, should be instructed to examine every path or road leading towards the enemy, and to ascertain whether they and the adjoining ground are passable or whether there are obstructions anywhere. Also the paths leading to the flanks and to the supports must be further examined. Any inhabited place in the immediate vicinity must be specially visited. There should be enough men for three of these patrols, so that one may be out, another ready to go out, and one resting.

Having sent out the first of these patrols the officer rides again round his vedettes, accompanied by an orderly, and carefully examines the ground about each of the posts, pointing out to the men by what paths they must retire if they should have to fall back.

He should not omit to consider what he would do if the piquet were suddenly attacked during the day. As with an infantry piquet, much would depend upon his instructions; but, in general, a cavalry piquet would not fight, otherwise than to prevent the passage of small parties or reconnoiters.

\* The question of these signals is gone into in detail in Chapter VIII. page 189.

of the enemy through the outpost line. If the enemy is weak and the ground favourable, the piquet may advance to assist the vedettes, and make short rapid attacks upon the enemy's patrols.

Should the enemy appear in force beyond that of a small patrol, information is at once despatched to the support, and the piquet and vedettes fall slowly back. If, however, the enemy appears to be rapidly advancing upon the support, the piquet, should the ground admit of action, must not hesitate to attack and even to sacrifice itself, to prevent the support being surprised. In retiring, the piquet must take care not to interfere with the offensive forward movement of the support, but should keep off to a flank. Thus if the support is attacked in front, the piquet may assist it by coming up on the enemy's flank. If the enemy is repulsed, the piquet commander sends out pursuing patrols to report where he halts. These must be careful not to fall into an ambush and must go no further than a certain distance indicated to them. The piquet resumes its former position, but its ground must be changed shortly afterwards, the commander of the outposts being informed accordingly.

In a night attack a cavalry officer must feel himself rather helpless, as he can do little but retire. He should first endeavour by patrols to find out the strength of the enemy so that the main body should not be unnecessarily caused to move. Sometimes the ground occupied by a piquet on a main thoroughfare could be temporarily barricaded to prevent a night surprise. Care must be taken that passage is left for the retiring vedettes or patrols and that the piquet has a secure retreat. A few dismounted men might hold such a post for some time so as to check the enemy's advance.

#### DISTANCE OF THE OUTPOSTS FROM THE MAIN ARMY.

It will have been remarked, that we have given in the foregoing pages no approximate distance for the reserve to be advanced in front of the main body. We stated, however, that the commander, knowing the object to be effected by







the outposts, would determine therefrom, in the first instance, how far the line of resistance or supports should be advanced, and that all other distances, whether to the front or to the rear, should be relative to this line; we have also seen that the outposts have as their primary function the duty of delaying the advance of an enemy for such time as will enable the army in rear to form up to receive him.

Once the enemy has come within artillery range of the position, and is able to bring his guns into action, the attack may be said to have commenced. It is evident, therefore, that the necessary obstruction to his advance must take place outside the zone of effective artillery fire, whatever this may be.

Sir Edward Hamley suggests a mile and a quarter or 2,200 yards from the position, as a fair distance for purposes of calculation. Resistance to the enemy's advance must therefore be made outside that line, sufficiently prolonged to delay him the full time necessary for preparation.

Hence the situation of the reserve with reference to the main body depends on the distance of the line of resistance from the position, which itself must be determined in accordance with the varying conditions of each case, it being always borne in mind that the outposts must under no circumstances be advanced so far to the front, that they cannot be securely retired without undue loss.

The possibility of delaying action being assisted by the nature of the ground, would of course be taken into account by the outpost commander. Sometimes he would direct that the piquets fall back at once on the supports and there make their stand, sometimes that the whole should fall back on the reserve.

Sometimes again, but more rarely, the supports would advance in whole or part to the piquets, and the retarding action would be effected by a succession of short stands at favourable points on the line of retreat.

These would all be elements of calculation, so that, knowing the extent to which he is to resist and for what period of time the enemy must be held back, the commander can clearly decide the means by which his instructions are to be carried out.

## EXERCISE IV.

### OUTPOSTS.

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#### IDEA.\*

A force (Red) having encamped on Redburn and Ray Hills, protects itself on the south against an expected advance of the enemy (Blue) from the direction of Carsham.

The outpost line extends from Cleveley Park, to Ripley Bridge upon the East River. Red's force comprises the three arms, but is very weak in cavalry, and for this and other reasons the general outpost line is composed of infantry and artillery only. The right of the line being, however, not so well protected by the ground as the left, some additional security is provided on this flank by a party of cavalry for patrolling purposes.†

#### DISPOSITION AND POSTING OF THE OUTPOSTS.

The troops detailed for the duty consist of a battalion of infantry of 800 men, and a battery of field artillery, with a small party of cavalry for the right flank, the whole under the command of Lieut.-Colonel X. The commander is instructed to select the Tarbor River as his line of resistance.

Lieut.-Colonel X., on examining the map, perceives that the line he is to occupy extends from west to east about 3,000 yards. The River Tarbor is crossed by four bridges on his front, while the East Tarbor is crossed by three more on his left. The Tarbor runs between two parallel lines of hills, of which that on the near bank is from 80 to 100 feet higher than the other. The village of Glenfield is situated centrally in rear of the position, and would seem to point out the best situation for the reserve.

The advanced portion of the outpost line is divided into

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

† This party moving on the Great Marlow Road, outside the limits of the two-inch map, cannot be shown in the illustrations, and is therefore only incidentally alluded to in the text.

two sections under field officers. Nos. 1 and 2 companies are allotted to the right section ; Nos. 3 and 4 companies to the left section.

Nos. 5, 6, 7, and 8 companies of the battalion are told off for the reserve, to be retained under the command of Lieut.-Colonel X.

Nos. 1 and 2 companies are to constitute the right support, to furnish the piquets in their front. No. 1 company is under Captain A. with Lieutenant B. No. 2 company is under Captain C. with Lieutenants D. and E. Two guns of the battery under Lieutenant O. are attached to the right support, and also the small cavalry party already mentioned for duty on the extreme flank. These are all under the command of Major P. of the infantry battalion, who is placed in charge of the right section.

The centre support is composed of half of No. 3 company under Captain F. with Lieutenant G., and is to send out a piquet to its front.

The left support is composed of the remaining half of No. 3 company under Lieutenant H., and No. 4 company under Captain J. with Lieutenants K. and M. This support is to furnish the piquets for the left of the line. Four guns of the battery, under Captain L., are attached to the left support.

These troops are placed under the command of Major Q. of the infantry battalion, who is in charge of the left section.

Major R., the commander of the battery, is to remain with Lieut.-Colonel X., whose position will be with the reserve.

A line of observation in advance of the line of resistance having been selected for the front of the outpost position, the general arrangements are explained and the ground pointed out on the map, by the commander of the outposts, to the field officers of sections, and to the commander of the artillery.

The supports then march off, preceded by advanced-guards, to their respective posts.

Major P., having reconnoitred his part of the position, places his support at the cross-roads above Winsley Bridge, close to the entrance to Cleveley Park. He directs Captain A. to send a piquet of forty men from No. 1 company, under an officer, to Totley Bridge, and Captain C. to detail a piquet of the same strength from No. 2 company for Winsley Bridge. A detached post of 12 men, under a non-commissioned officer, is also detailed from No. 2 company, and stationed at the cross-roads on the Great Marlow Road west of Cleveley Park.

The piquets being numbered from the right, No. 1 piquet

marches on to Totley Bridge under Lieutenant B., and No. 2 piquet to Winsley Bridge under Lieutenant D.

When the piquets have marched off, the rest of the support is placed under the immediate command of the senior company officer, Captain C.

No. 1 piquet is posted at Totley Bridge, and is covered by three double sentry posts; one in front of Magpie Wood near the Pawley Road, another near the river to observe the right flank, and a third between these two posts. The sentries in front of Magpie Wood require to be linked to the piquet by two connecting sentries. A sentry is also posted at the piquet to take charge of the arms, and to look out for signals from the advanced sentries.

No. 2 piquet is posted about 250 yards in front of Winsley Bridge, on the road leading to Drayton Hill. It is covered by two double sentry posts, one in front of the east end of Magpie Wood, and another at the head of the valley formed by Drayton Bottom. A sentry is also posted at the piquet.

The guns attached to the right support are placed by Lieutenant O. in a field between Cleveley Park and Rainham Wood, where they command Churton Hill and the approaches from Wolverton and Carsham, at a range of about 2,500 yards.

Major Q. having gone on with his advanced-guard to reconnoitre from Rainham Hill, and to examine the ground which he has to occupy, places the left support at the four cross-roads above Stanton Bridge. The centre support he posts at the entrance to Rainham Wood, where the main road from Glenfield is crossed by the road which runs from east to west of the plateau of Rainham Hill.

The centre support is under the command of Captain F., who details a section of No. 3 company, 25 men under Lieutenant G., to furnish a piquet for Yatton Hill.

This piquet, No. 3, marches off and is posted on the main road about 300 yards in advance of the bridge, with two double sentries to its right and left front overlooking Drayton Bottom, and a single sentry at the piquet.

The left support, which is under the command of Captain J., furnishes No. 4 and No. 5 piquets.

No. 4 piquet, consisting of 25 men of No. 3 company under Lieutenant H., is sent to cover Stanton Bridge. It is posted about 100 yards in advance of the bridge, at the junction of the Minton Road with the main road, and has two double sentry posts and a sentry at the piquet. One of the double sentry posts faces towards Minton; the other overlooks the low ground

about South End Farm from the edge of Yatton Hill, and is obliged to be linked to the piquet by a connecting sentry on account of an intervening plantation.

The section of No. 3 company remaining with the left support, is under the immediate charge of the colour-sergeant, no officer of the company being available to command it.

No. 5 piquet is posted near the windmill, and consists of half of No. 4 company, 50 men, under Lieutenant K. This piquet is of great importance, both on account of its position on the flank, and because the ground to be guarded presents difficulties in the way of effectual observation without undue extension, such as often perplex the outpost commander.

Lieutenant K., on arriving near the windmill, proceeds to the front with an extended patrol and makes his preliminary reconnaissance. From the summit he obtains an extensive view to the east and south. Sending the patrol to search Ripley Woods, he selects three clear-sighted men from the first relief of sentries, which has followed him to the summit under charge of a sergeant, and establishes them as a group at the windmill, to keep a look-out sentry in the upper gallery. He then places a double sentry on the brow of the hill looking east, and sends back to the piquet for three parties, each of six men with a corporal, to be sent up to him. On their arrival they are despatched to form detached posts, one at Hurst Bridge and another at Ripley Bridge, to furnish double sentries on the farther side of the bridges; the third to a group of cottages not far from Rushton Bridge, to furnish a double sentry on the road about 200 yards on the near side of the bridge.

A group with sentry is also posted at the south-east corner of the western portion of Ripley Woods. This post, and the detached post near Rushton Bridge, are linked to the piquet, which has moved up for its final position close to the windmill on the southern slope of the hill, by two connecting sentries, one on the road near the gap between the woods, and another at the thinnest part of the eastern wood.

On revising these arrangements, it is found that the double sentry on the east brow of Windmill Hill can be replaced by a single sentry, to connect the detached posts at the bridges with the piquet, the look-out from the windmill gallery being sufficient for all purposes of distant observation.

A sentry is also placed at the piquet to take charge of the arms, and to look out for any signals made or sent back from the sentries or detached posts of the line of observation.

The guns attached to the left support are posted by Captain L. on Rainham Hill a little to the right rear of the infantry, whence they can bring under fire the most important points of approach to the left front of the position, viz. Minton Bridge at a range of one mile, and the main road from Hambden, where it passes through Holm Woods, at a range of 2,500 yards.

Captain L., however, perceives that from this position his guns cannot also command Rushton Bridge, which is the weak point of the left flank. He therefore rides forward and selects a second position, in a field on a spur of the hill above Stanton Farm, from which Rushton Bridge can be commanded at a range of 1,000 yards. Having caused an easy passage for guns to be made from the road, through the fences, to this field, in case it should be necessary to occupy it, a non-commissioned officer of the battery is stationed at the spot; his orders are to warn the commander of the guns, when occasion requires artillery fire to be brought to bear upon Rushton Bridge. This non-commissioned officer is to be frequently relieved.

As soon as intelligence is transmitted to the rear of the lines of sentries, piquets, and supports being established, they are inspected by the commander of the outposts, Lieut.-Colonel X., who is accompanied by Major R., the officer commanding the artillery, and also by Majors P. and Q., in command of the different sections of the line.

The detailed disposition is found to be as follows :

*Right section under Major P.*

|   | Officers | N.C.O. | Men |
|---|----------|--------|-----|
| Detached post, (from No. 2 company), on Great Marlow Road . . . . .         | 0        | 1      | 12  |
| No. 1 piquet, (from No. 1 company), at Totley Bridge, under Lieutenant B.:  |          |        |     |
| 2 sergeants and 2 corporals . . . . . = 4                                   | 1        | 4      | 40  |
| 3 double sentries in reliefs . . . . . = 18                                 |          |        |     |
| 3 single sentries in reliefs . . . . . = 9                                  |          |        |     |
| Patrols, &c. . . . . = 13   |          |        |     |
| No. 2 piquet, (from No. 2 company), at Winsley Bridge, under Lieutenant D.: |          |        |     |
| 3 sergeants and 2 corporals . . . . . = 5                                   | 1        | 5      | 40  |
| 2 double sentries . . . . . = 12  |          |        |     |
| 1 single sentry . . . . . = 3   |          |        |     |
| Patrols, &c. . . . . = 25   |          |        |     |
| Carried over . . . . .  | 2        | 10     | 92  |

|   | Officers N.C.O. Men |    |     |
|---|---------------------|----|-----|
| Brought forward . . . . .   | 2                   | 10 | 92  |
| Remaining with support, (portions of Nos. 1<br>and 2 companies), under Captain C., Cap-<br>tain A., and Lieutenant E. . . . . | 3                   | 10 | 108 |
| Total . . . . .   | 5                   | 20 | 200 |

Add two guns under Lieutenant O. stationed near Cleveley Park. The cavalry party on the right flank is also under Major P.'s command, and sends reports to that officer.

*Left section under Major Q.*

|  |      |     |   |    |
|--|------|-----|---|----|
| No. 3 piquet, (from No. 3 company), at Yatton  |      |     |   |    |
| Hill, under Lieutenant G.:                     |      |     |   |    |
| 1 sergeant and 1 corporal . . . . .            | = 2  | } 1 | 2 | 25 |
| 2 double sentries . . . . .                    | = 12 |     |   |    |
| 1 single sentry . . . . .                      | = 3  |     |   |    |
| Patrols, &c. . . . .                           | = 10 |     |   |    |
| Remaining with centre support, (part of No. 3  |      |     |   |    |
| company), under Captain F. . . . . 1           |      |     |   |    |
| 3  |      |     |   |    |
| 25   |      |     |   |    |
| No. 4 piquet, (from No. 3 company), at Stanton |      |     |   |    |
| Bridge, under Lieutenant H.:                   |      |     |   |    |
| 2 sergeants and one corporal . . . . .         | = 3  | } 1 | 3 | 25 |
| 2 double sentries . . . . .                    | = 12 |     |   |    |
| 2 single sentries . . . . .                    | = 6  |     |   |    |
| Patrols, &c. . . . .                           | = 7  |     |   |    |
| No. 5 picquet, (from No. 4 company), at Wind-  |      |     |   |    |
| mill Hill, under Lieutenant K.:                |      |     |   |    |
| 4 sergeants and 3 corporals . . . . .          | = 7  | } 1 | 7 | 50 |
| Look-out station, single sentry . . . . .      | = 3  |     |   |    |
| 5 single sentries . . . . .                    | = 15 |     |   |    |
| Detached post near Rushton Bridge . . . . .    | = 6  |     |   |    |
| Detached post at Hurst Bridge . . . . .        | = 6  |     |   |    |
| Detached post at Ripley Bridge . . . . .       | = 6  |     |   |    |
| Patrols, &c. . . . .                           | = 14 |     |   |    |
| Remaining with left support, (portions of Nos. |      |     |   |    |
| 3 and 4 companies), under Captain J.           |      |     |   |    |
| and Lieutenant M. . . . . 2                    |      |     |   |    |
| 5  |      |     |   |    |
| 75   |      |     |   |    |
| Total . . . . . 6                              |      |     |   |    |
| 20   |      |     |   |    |
| 200  |      |     |   |    |

Add four guns under Captain L. stationed on Rainham Hill.



When the right section of the line is being inspected, Major P. explains to the commander of the outposts, that Nos. 1 and 2 piquets were allotted 40 men each as the result of a preliminary calculation, necessarily made before the sentries were posted, and that No. 2 piquet, having only found it requisite to post two double sentries, has a larger number of men left for patrolling than would have been detailed, under ordinary circumstances, for that duty alone. It has, however, been thought better, instead of withdrawing them, to direct the commander of the piquet to undertake the whole of the distant patrolling necessary upon the right front of the line.

Lieut.-Colonel X. approves of this being done, and also suggests that Lieutenant E., the third officer remaining with the right support, might be sent to join No. 2 piquet, to conduct the more important part of the patrolling duty. This is accordingly carried out, Lieutenant E. proceeding to report himself for duty to Lieutenant D., the officer in charge of No. 2 piquet.

The necessary patrolling on the immediate right flank of the outpost line, is to be carried out by the detached post on the Great Marlow Road, and by No. 1 piquet. The cavalry on the extreme right is conducting the advanced patrolling in the same quarter.

On visiting the piquets at Yatton Hill and Stanton Bridge, Major Q. points out to the commander of the outposts, that the reconnoitring patrols already sent out, include Drayton Bottom as far as the junction of the two streams, Drayton Hill, Heath Hill, and the town of Minton, in the circuit of their respective routes.

Passing on to the left of the line, the position of Rushton Bridge and the manner in which the officer of No. 5 piquet has placed it effectively under observation, without an unnecessary extension of his detached posts, are shown to the commander.

The country being open on the left bank of the river, immediately to the east of Windmill Hill, and clearly seen for some distance from the look-out station, it has not been considered necessary to patrol it by day in that quarter, but the officer of No. 5 piquet reports that he has sent a patrol over Ripley Bridge to return by Rushton Bridge, and another to search the far portion of Ripley Wood which lies on the north bank of the Tarbor near Minton.

The commander approves of these arrangements, as also of those made by the officers of artillery on either flank. On the

whole, he considers the positions of the sentry posts along the line well chosen, but directs the attention of the commanders of supports to some instances, where provision has not been made for an easy communication between the sentries and the piquet to which they belong. Orders are immediately given to piquet officers to cause passages through fences to be made wherever required, in some cases lateral communications between two adjoining sentry posts being also desirable.

Lieut.-Colonel X. now proceeds, in consultation with the commanders of sections and of the artillery, to arrange the necessary dispositions for the outpost line at night.

Bushton Bridge is to be prepared for destruction during the day, by a special party sent out for that purpose, and to be blown up at nightfall by the detached post in its vicinity.

The four bridges on the Tarbor, with Hurst and Ripley Bridges on the East Tarbor, are to be strongly held at night, being obligatory points of passage for an enemy advancing from the south or south-east, as the rivers are swift, deep, and unfordable at any point along the whole line. The piquets on the south bank of the Tarbor will accordingly be drawn back, at nightfall, to the bridges.

The detached post, from No. 2 company, at the cross-roads on the right flank, will be relieved at nightfall by a piquet of 20 men of the same company, under Lieutenant E., who will no longer be required with No. 2 piquet. In order to avoid the confusion that might be caused by re-numbering the piquets at night, this will be called the right flank piquet.

No. 1 piquet will remain at Totley Bridge on its near side, the bridge being just before nightfall temporarily barricaded, by upsetting thereon some vehicles found at the adjoining public-house, with a few branches of trees cut in Cleveley Copse added as an abattis.

The remainder of No. 1 company under Captain A. will be in support on the river road, at the south corner of Cleveley Copse.

No. 2 piquet will be posted similarly on the near side of Winsley Bridge, which will be also temporarily barricaded at nightfall.

The remainder of No. 2 company, 40 men, will be placed, one-half under the colour-sergeant in immediate support of Lieutenant E.'s piquet, and the other half under Captain C. in support of No. 2 piquet, at the cross-roads close to the day post of the right support.

The lines of retreat of all three piquets will be directed upon the position taken up by Captain C.; thence upon Glenfield.

No. 3 piquet will hold Yatton Bridge in an analogous manner, barricading it with abattis. The centre support under Captain F. will move down towards the piquet and be stationed on the main road, in the wood, at about 200 yards from the bridge.

The line of retreat of this piquet and support will be directed upon the day post of the support; thence upon Glenfield.

No. 4 piquet will similarly guard Stanton Bridge, having the remaining section of No. 3 company, under the colour-sergeant, in immediate support on the road west of Stanton Farm.

In the case of No. 5 piquet, the groups and connecting sentries will be drawn in at nightfall, as also the detached post near Rushton Bridge, when it has performed its duty of demolition. The detached posts at Hurst and Ripley Bridges will be reinforced to a strength of 25 men each, Lieutenant K. assuming the command at Ripley Bridge, and detaching Lieutenant M., who has been sent to join the piquet for night duty, to take charge of Hurst Bridge.

The remainder of No. 4 company under Captain J. will move forward from the day post of the left support, and take position in immediate support of the parties at the bridges; 20 men under the colour-sergeant being placed on the road leading down from the hill to Hurst Bridge, and 30 men under Captain J. on the road leading down to Ripley Bridge.

The lines of retreat of the piquets at Stanton, Ripley, and Hurst Bridges, and their supports, will be directed upon the day post of the left support, thence upon Glenfield, by the road leading by the Royal Arms public-house.

Constant patrolling is to be kept up along the lower road, which, running along the west bank of the East Tarbor from Hurst Bridge to Ripley Bridge, and thence to Stanton Bridge across the fork made by the two rivers, connects all the night posts together by a main lateral communication as far as the right flank piquet on the Great Marlow Road.

Visiting patrols are also to be constantly sent along the south bank, from each of the bridges on the Tarbor to the next one, and from Hurst Bridge to Ripley Bridge along the left bank of the East Tarbor.

In addition to these, patrolling posts of four men each under a non-commissioned officer will be despatched from the right flank piquet, and from Nos. 2, 4, and 5 piquets, to patrol the

roads leading west, south, and south-east for a considerable distance. Part of these will be furnished by the cavalry which is withdrawn from its advanced position on the right flank; the remainder will be infantry patrols, but a mounted man should accompany each of these to bring back information rapidly.

The artillery are to be retained in their day positions, the line of fire and range to the main approach over Churton Hill having been carefully fixed, when they first took up position, for the guns on the right, and similar observations made at the same time, as regards the road over Minton Bridge and the main approach through Holm Woods, for the guns on the left. Thus, should occasion require it, these points can be brought under artillery fire during the night.

The reserve will retain its post at the four cross-roads south of Glenfield, during the night, being favourably situated for any required forward movement along the roads leading to the front, or for covering the retreat should the enemy break through the line at any point.

The dispositions of the outposts by day are shown in Fig. 1, and by night in Fig. 2, of Plate XI.

#### OBSERVATIONS.

In the posting of the outpost line, thus described, we may note that certain general principles have been observed and followed.

*First.*—A tactical feature is selected for the line of resistance, which materially strengthens its power of opposition.

*Second.*—This line is chosen so as to oppose the enemy's advance to a favourable position, from which he could open artillery fire on the camp at effective range.

*Third.*—The principle of keeping the various commands as far as possible intact has been observed. Thus, in each section, the supports with their piquets consist of whole companies under their own officers, as little broken up as may be under the circumstances of each case, and then only into sub-units whenever it can be so arranged. Although this at first sight would seem to give certain piquets a preponderance of men for patrolling, on the other hand it affords the counterbalancing advantage, of larger bodies of men being available for resistance on the main routes by which the enemy may be expected to advance, and an additional moral influence, due to the men being associated at

the front with their own officers, non-commissioned officers, and comrades.

*Fourth.*—Instead of one or two companies being broken up into piquets, supported by other companies, the principle of a piquet and its support being formed by the same corps, has been extended into their being, when possible, formed by the same company. Thus the men on piquet, are not only serving at the front with their comrades, but are also supported by them in rear.

*Fifth.*—The day positions of the piquets and sentries, having been chosen rather with a view to observation than resistance, are in some cases pushed across the river, but not too far to the front, so that they could easily fall back on and contest the bridges, aided in such case by the supports.

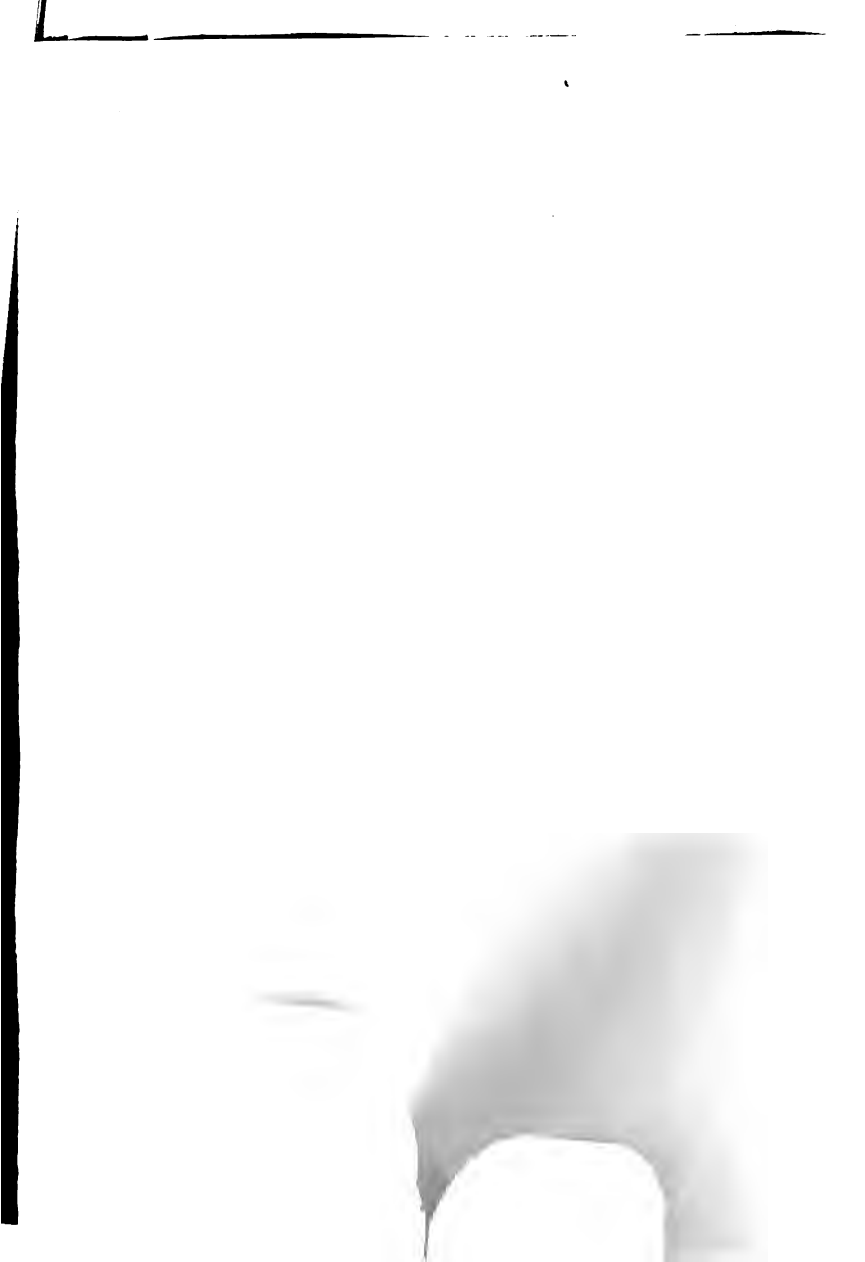
The position of the reserve, situated centrally with regard to the supports, the roads diverging from Glenfield and the open heath-covered slopes of Rainham Hill being moreover in its front, enables it to move with perfect facility to any threatened part of the line.

The guns are posted on commanding points of the range of hills, from which they can sweep the approaches to the position which must be passed by the enemy's columns in his advance.

*Sixth.*—The principle of guarding only the main approaches to the position by fixed posts during the hours of the night, is here carried out in the dispositions directed to be made for the night service. The enemy cannot advance at night in any strength except by the roads; and if these are effectually and strongly guarded, the main purpose of securing the position from surprise is thereby accomplished.

*Seventh.*—The number of men employed is in due proportion to the extent of the position, taking the nature of the ground into account. We have 800 infantry and 6 guns, on a line which may be taken at 3,000 yards. This is at the rate of 470 infantry and from 3 to 4 guns to the mile.





## CHAPTER VII.

## RECONNOITRING.

## INFORMATION BY MEANS OF RECONNAISSANCE.

IN a former page we have said that the questions of security and information for an army in the field are inseparably connected. We have since discussed the measures necessary for the safety of an army in the forward march, and at the halt, touching only incidentally on the subject of information. We will now consider in more complete detail the mode of procuring intelligence by means of reconnaissance.

We have before stated that reconnaissance may be either observation of the enemy or of the country.\* The former may be considered under three heads :

1. Reconnaissance in force.
2. Special reconnaissance.
3. Ordinary reconnoitring or patrolling, with parties strong or weak, according to circumstances.

1. In a minor tactical course we may dismiss the question of a *reconnaissance in force* with a few words. It is an openly offensive movement of the three arms ordered by the general in chief, to be put in execution for the purpose of ascertaining the enemy's strength, and if possible his dispositions. With this view it is commonly the precursor to a general action.

\* Reconnaissance of the country is discussed in Vol. I. of this series.



The enemy should be threatened in such a manner as to lead him to suppose that a real attack is intended, and to force him to discover his strength and position. During the advance, reconnoitring officers should be well to the front, seizing upon every point of vantage for a good look-out, noting the details of the enemy's position, marking where his troops and guns are placed, and estimating distances.

The reports and notes (rapid outline landscape sketches sometimes added) of these officers, when put together on return, will afford valuable information to the general commanding. Prisoners are taken by making dashes with cavalry at the enemy's sentries and detached posts in the preliminary advance, and by careful questioning at headquarters intelligence is often obtained from them. Care must be taken that the movement does not lead to a general action for which the force is not prepared. By advancing for the reconnaissance late in the day, even should it be difficult to withdraw, darkness will enable the commander to put a stop to the fight.

2. A *special reconnaissance* is always made with a specific object in view. It may be to reconnoitre a position, or to attack a post in order to force the enemy to discover his intentions. Thus should the post be vigorously defended, or yielded without a struggle, information is in either case obtained by inference, from the importance or little value attached to its possession. A special reconnaissance is usually strong, but not of a strength beyond what is absolutely required for the purpose, as the moment the object in view is attained the party should again fall back.

3. Under the head of *reconnoitring parties or patrols* are included all smaller reconnaissances, from the exploring patrol of a corporal and file of men, to the staff officer's party of cavalry with infantry in support.

In giving our special attention to this class we will first consider infantry patrols, then cavalry patrols, next the screening and reconnoitring duties of advanced cavalry, and

finally the cases in which the several arms would be used in combination for an ordinary reconnaissance.

As regards patrolling generally, we must premise that the instructions issued by authority in our service on the subject of this duty, are hardly sufficient for its full comprehension and practice. The student is therefore forced to draw upon the many excellent text-books with which foreign armies are amply provided, for much of his theory. But here a difficulty, that, small though it be, nothing but official authority can remove, presents itself at the outset. In most of the Continental armies the distinctive functions of each sort of patrol are appropriately marked by a specific name. Thus the Germans have designations expressing secrecy or cunning for one patrol, creeping or crawling\* for another, and searching for a third. The French have several names for patrols, besides the rounds or visiting patrols, such as look-out patrols, creeping patrols, expeditionary patrols, (for some special object, as for example to destroy a bridge), and many others.

In our service, putting aside visiting patrols, we have no other authorised names with reference to reconnaissance than reconnoitring patrols, and strong patrols. There is little doubt that it is a good thing to have distinctive names for special duties, and we ought to have at least one or two more designations for patrols than we possess.

The Continental secret patrol might be called with us a 'stealthy patrol,' and, in consideration of the poverty of our military vocabulary, we might borrow from our sporting vernacular which is varied and expressive, and suggest to our men the special nature of their duty by telling them off to serve with a 'stalking patrol.'

#### INFANTRY PATROLS.

An *infantry patrol* should be composed of picked men, instead of the first files on the right of the company being

\* Our American cousins in their last war are said to have used the expressive term 'sneaking' for this kind of patrol.

told off for it, and only those who have an aptitude for the duty and who have been trained therein should be selected.

A good patroller should have all his wits about him, and his hearing and vision should be perfect. He should possess a readiness of resource under difficulties, be quick at understanding and carrying out his orders, and have been moreover taught to march by the points of the compass.

The leader of a patrol should in addition be able to read his orders, and to write a clear and correct report.

A patrol would not consist of less than three men, the senior a non-commissioned officer or old soldier in charge of the party. A patrol of this strength would probably be of the secret character. The men should move one behind the other, in single file, as in Fig. 1, Plate XII., the commander in the centre about 50 yards from the leader, when on a narrow road or path.

If the road be sufficiently wide or through fields, they may be formed, as in Fig. 2, one man at the head as point of the patrol, the others following at 50 yards' distance. As the ground opens out the commander and the second man may be more or less apart, as in Fig. 3. In open country if one flank is dangerous, the second man is more in that direction, as in Fig. 4. If both flanks are dangerous, the two men of the patrol may march abreast of each other 100 yards apart, as in Fig. 5, followed by the commander 50 yards to the rear.

Four men would march in a similar manner, a leader or point 50 yards at least in advance of the others, who would either remain with the commander, as in Fig. 6, or be detached to each flank, as in Fig. 7, according to the nature of the route.

In open country a more extended front, up to perhaps 200 yards from flanker to flanker, as in Fig. 8, and a greater distance from the point to the commander, may be assumed.

These formations enable the men, according as the ground permits, to see, mutually support, and assist one another, without bringing them so close together that they could all be cut off or taken at once, in the event of a surprise.

*The stealthy patrol.*—If possible, the men of a stealthy patrol should be led to high ground before starting, in order to observe the country they are to explore, and to have pointed out to them any landmarks or remarkable objects already noticed.

While employed on the duty of patrolling, the men must neither talk nor smoke. They must take care their arms and accoutrements do not rattle or clash, and abstain from noise in advancing, walking on soft ground in preference to hard, and making frequent halts to observe their direction both for advance and retreat.

They must note any peculiarities of ground which might be useful to them in falling back, and if necessary, in order to be certain of finding their road again on return, they must mark it out by broken branches, by scores on the bark of trees, by straw fastened to the trees or fences, or even by a heap of stones. These precautions are especially required where there are a number of paths intersecting one another at various angles in a close country.

During the day they will steal along hedges and walls, and move if possible by hollow roads and ravines, or water-course lines. They will disappear in woods and work through to the far borders on the enemy's side, whence, concealed from view, they may observe all that passes. A patrol should not take rest until its return, except during such time as it may be hidden in observation of the enemy. Should there be absolute necessity for a short halt, a place should be selected not too close to habitations and affording an easy retreat in case of necessity. By day it should be on high ground, but well under cover, so that the patrol can keep a good lookout and yet be unperceived by the enemy's scouts. By night it should rather be on low ground so as to bring advancing foes into view against the skyline, the patrol remaining securely in shade.

The mission of a stealthy patrol being not to engage but to observe the enemy, it should avoid fighting unless it be necessary to force an opposing patrol to show its strength. Should the enemy's patrol or party be repulsed, the stealthy

patrol must not pursue, unless it be necessary to do so for the purpose of gaining information.

A stealthy patrol should be disposed in such a manner as to render it improbable that the whole of the party could be taken or cut off. An endeavour should always be made to provide for some of the men escaping with the information. In case it should be necessary, with this view, to disperse before a sudden attack of the enemy, the party will make their way separately to a fixed place of rendezvous chosen by the commander on the march out.

The patrol should never as a body enter any building or its surroundings, nor should the men halt in its immediate neighbourhood longer than to make necessary inquiries.

Should two friendly patrols meet they must recognise one another without noise, especially if the enemy is at hand. They should interchange news before moving on.

On nearing the enemy stealthy patrols must redouble their precautions. One of the party should now and then place his ear against the ground and listen, and if suspicious sounds be heard the men must hide. Should they perceive the enemy on the march they must not fire nor show themselves, but, hidden from observation, seek to discover his force and design. If it is possible for one man to run instantly to the rear without being seen, he should be despatched with the news of the enemy's presence, rejoining his party again later on.

When a patrol suddenly comes across a sentry or party of the enemy during the night and is challenged, it should halt and remain motionless without replying. During the obscurity that prevails the enemy may possibly think himself mistaken and pass on, or else allow of the patrol retiring without detection. In the event of the presence of the party being clearly perceived, time may yet be afforded for making good the retreat, if one of the men be able to speak a few words in the enemy's language; or approach by this means may be made to the sentry, so as to carry him off before he can fire.

Should the patrol unexpectedly encounter the enemy in

force, and be unable to retire in time to give warning of his presence, signal must be made by firing, the patrol falling back upon the route by which it had advanced.

Patrols, in a country where they can find their way with facility, and if not obliged to retreat before the enemy, should endeavour to return by a different route from that they had followed in going out.

Infantry patrols of the stealthy or secret nature should not as a rule extend their investigations farther than half a mile in advance of the troops from which they are detached.

The stealthy patrol, as employed by Continental armies, would not be composed of more than the three or four men whose ordinary formations we have already seen. But patrols of greater strength called reconnoitring patrols have often the same necessity for secrecy in their march and proceedings, so that many of the foregoing general rules are equally applicable to them.

With five men in open ground, Fig. 10, Plate XII., the patrol can attain its first complete and perfect organization as a marching body, having an advanced-guard, flankers, and a rear-guard, the commander representing the main body.

The only exception to this order of march would be with the point of an advanced-guard, consisting of a non-commissioned officer and four men, which may be looked on as a pure reconnoitring patrol. Here, Fig. 11, the extreme front being the important point, there would be two men in advance, but none in rear as the following parties are sufficient protection in that quarter.

In proportion as the strength of the patrol increases, so the formation approaches nearer in all details to that of a column of troops *en route*. The distances and intervals between one body and another are extended, but they are always limited to such that the power of directing the whole is not removed from the commander of the patrol. The direction comes from the commander to the leading man, either by voice or preconcerted signal, and through the leading man to the flanks, partly by signal and partly by a simple arrangement of conformity on the part of the flankers to the

movements of the leading man. One or more men are always, when possible, in rear, not only for protection but to ensure the information being taken back should those in front fall into an ambush.

The typical formations shown in Figs. 12 to 16, Plate XII., may now be studied, but it must be clearly understood that they are only to be followed generally, and so far as they apply to the special circumstances of each case; for the strength of the patrol is but one of many considerations to be taken into account, all of which must necessarily influence its exact order of march.

#### MOVEMENTS OF A SMALL INFANTRY PATROL.

The following notes on the method of conducting a small infantry patrol under various conditions, may also be found useful and tend to a better comprehension of the subject. They are compiled in great measure from the German and French regulations and instructions for infantry patrols, after careful comparison with our own system so far as it goes. The German system of patrolling is admittedly good, while in the French service all minor tactical details of duty have been strictly revised, with due regard to the lessons taught by the last war.

*The patrol in a close country.*—In a close country the advance is beset with difficulty from the outset, as the patroller is exposed to the chance of an enemy being behind every obstacle he encounters. The men must therefore move with the greatest circumspection and from one point to another, where they should halt and carefully reconnoitre before advancing farther. These points should be close to one another, and the movement from one to the other rapid, if the enemy is near and the ground favours surprise. The patroller must look sharply about him, and take care that he discovers the enemy's presence before the enemy discovers his.

*In an open country.*—In open ground if the danger of surprise is less the difficulty of concealment becomes greater.

The patroller must therefore be still more cautious, so as to avoid being detected by the enemy. He must take advantage of the smallest extent of cover, neglecting nothing that may enable him to escape being seen. He should work up the roads close to the fences if there are any, sometimes in the ditch. He must the more carefully examine places where the enemy might lie concealed as they are fewer in number. If a column is following in rear, care must be taken that its march is in no way retarded by the researches of the patrol. The reconnaissance must in such cases not only be effected with the requisite exactness, but with sufficient rapidity, time being an important element in these operations.

*At lateral roads.*—When a patrol comes to a branch road, two men, one in advance of the other, should push rapidly up it till they come to the first turn in its general direction. From this point they can generally see some way up the road. If nothing is in sight they return, but should they see anything suspicious one man runs back rapidly to stop the patrol's advance along the main road, while the other, hidden at the turn of the branch road, continues to reconnoitre.

*When crossing fields.*—In traversing fields, the hedges, ditches, banks, and the least accident of ground must be utilised to the fullest extent. If the cover is parallel to the general route, the patroller must keep it between himself and the probable quarter in which the enemy may be; but if it is perpendicular to the advance, he must halt behind each obstacle to pull himself together, look out for a moment, then rapidly clear it, and push on to the next point with all speed.

*When ascending hills, knolls, or high folds of ground.*—On approaching hills or high ground, if there are sufficient men in the patrol to send one or more to each flank round the base of the hill, while the leading man advancing up the near slope looks carefully over the summit from behind the brow, it should always be done. But if there are only three or four men in the patrol, one must advance up the slope followed by the second at a little distance, the other man or men farther to the rear so as to communicate back to the



following column, if there is one, or to ensure all of the party not being surprised or cut off, if the patrol is detached. In such a case as this, the formation shown in Fig. 1, Plate XII., the senior or chief of the party should advance second up the dangerous ground. If the leading man sees anything doubtful he makes signal, and the commander holds up his hand as sign for every one in rear to halt, while he moves up to the leader to reconnoitre. Should all be well he gives the sign to advance again. The point or centre group of an advanced-guard, which, as we have remarked before, is a reconnoitring patrol, may be worked in this manner; but a more confident advance is possible in such case than if the patrol is isolated, both on account of the supporting parties in rear, and of the close vicinity of the flanking parties upon whom much of the examining work devolves.

*At a defile.*—If the sides or heights bordering the defile can be examined without too much loss of time, they should be reconnoitred by flankers before the leading man enters; but if the examination cannot be made, either because of their inaccessibility or on account of the time that it would take, the patrol must go through without it. First one man leads off at a steady double, looking out sharp to right and left as well as front, and ready to give instant signal by firing if necessary; then another man follows at a short distance in the same fashion. Should the defile be too long to keep up the double march right through the pace must be moderated. The third man remains at the entrance as long as he can see the others, then follows them. With a sufficient number of men a patrol may fairly reconnoitre a defile in this manner even if the flanks are inaccessible, and rapidly transmit back a signal of safety or danger through its entire length. In no case, however, but that of absolute necessity should a force be permitted to enter a pass through hills or woods, if the enemy may be near, without both flanks being thoroughly examined by the advanced patrols. In the case of hills, the nearest crest on either side should if possible be occupied. In irregular warfare this is very important.

Should there be any cross-roads in a defile, the point of an advanced-guard must carefully examine them for some distance up, before passing on, as the enemy might possibly by those means make a flank attack on the column.

*At a hollow road.*—The same rules apply to the case of a hollow road, but it is usually possible to occupy the crest on either side, which should accordingly be done. If the patrol is small or the ground too difficult, the hollow road must be passed in the manner prescribed for the defile under similar conditions.

*At a bridge.*—Before crossing a bridge it should be carefully examined to ascertain if the enemy has tampered with it. This is the first duty of the two leading men of a point if a column is on the march. Should the bridge appear safe the patrol would pass over it at the double, in the manner suggested for a short defile with inaccessible flanks.

*At the passage of a stream or ford.*—When a stream or ford is met with, across which there is only a narrow passage, the patrol must restrict its front. As soon as the crossing is effected the flankers spread out again right and left. If a watercourse stops the advance and no information as to fords can be obtained from the inhabitants, or by first inspection, the stream must be sounded, should a column be following in rear. Should the patrol be alone, a detour may be effected unless the stream can be crossed by any ready expedient.

*When searching small woods or groves.*—The leading man goes along the outside edge of the wood, followed a little in rear by the commander, who works along the border just inside it, so as to see well into the wood without at the same time losing sight of the leading man outside. The third man follows, well to the rear, outside the wood. If the preliminary examination of the border reveals no sign of occupation, the two men in front cautiously enter the wood, and, going through it, look out from the opposite side, keeping well concealed. The third man follows them up round the outside edge, and finally joins the others when they emerge from the wood on the farther side.

*When searching large woods.*—If the wood is of any extent, a small patrol of three or four men must content itself with, at the best, an imperfect examination. If not intersected with roads, the borders alone can probably be explored, the method suggested for small woods being followed. Should there be a road through the wood, one man would reconnoitre up it to the first turn, whilst the others examine the borders of the wood on each side of the entrance. If nothing is discovered the patrol would then advance through the wood, one man leading on one side of the road, looking out well to his front and also through the wood to his flank, the next man following at a little distance on the other side of the road, keeping an eye on the leading man, and also looking sharply through the trees on his own side. The third man follows, keeping the others just in sight. Having gone through the wood, they examine the farther border, and if time admits would work right round the wood. Should there be other roads, they can also be patrolled in similar fashion.

The complete reconnaissance of woods with a larger force will be discussed later on.

*Examining houses, farms, &c.*—When a house or farm is approached by a small patrol, it should be well reconnoitred from a little distance to see if it appears occupied by the enemy. Should the first inspection be satisfactory, the commander and another of the party advance resolutely to the front entrance, the third man remaining hidden about 50 yards off within sight of the door. If the party is larger, the back and front entrance would be simultaneously visited. On the owner or some other person coming out, the commander obtains what information he can from him. If the summons is disregarded, one of the men enters and brings some one out. Should all appear so far safe, the house and enclosure is now thoroughly searched by two of the party, always leaving a guard outside. Should the searchers not reappear after a limited time, or if they do not answer when called upon, the man or men outside will fire a signal shot. Should this meet with no response, information of what has occurred must be taken to the rear by one man, the others,

if there are any, remaining in secret observation till reinforced.

*Examining small villages or hamlets.*—A large village or town should never be entered by a small detached patrol. It must merely be reconnoitred from favourable ground without. Should the village be in occupation by the enemy, some sign of his presence will no doubt be perceptible. In the case of a small village, the patrol may enter after due precautions, first seizing if possible an inhabitant of an outside house or farm to give information. A child or one or two children or youths should be taken by preference, and be questioned separately. They are more likely to disclose, or fail to conceal, the truth than grown-up persons. If the enemy is in the vicinity, the news will leak out in some form or other. Should all appear safe, the patrol will enter the hamlet, which will generally consist of houses on each side of a main road or street. The two leading men march one behind the other, the commander of the party second, on one side of the road, looking up at the houses opposite. The third man remains at the entrance unless the road twists, when he follows to keep the others in sight. Having gone right through the village, two of the party endeavour to obtain information, if necessary re-entering for that purpose, one or more being always outside. These last should, if possible, be posted in some good position for observing what passes, so as to be able to get off if the other men are seized by some of the enemy concealed in the houses.

*When approaching habitations at night.*—If a patrol comes across houses or a village after nightfall, the men must conceal themselves close by and listen for a few minutes. Should no unusual noise betray the enemy's presence, the two leading men must creep up to the nearest doors to listen, and endeavour to look in at any windows where there is a light to be seen. If information cannot be obtained by these means, an inhabitant must be seized should it be absolutely necessary to procure intelligence. If there is a village watchman, he can probably be taken by surprise. This is especially important if other troops are following in the rear.

## DUTIES OF THE COMMANDER OF A SMALL INFANTRY PATROL.

The commander of a patrol may sometimes, under the exigencies of service, be a private soldier, but if so his lowest qualifications, in addition to general intelligence, should be those already mentioned of capacity for reading his orders and writing a clear and correct report. A really good patrol leader should have a special aptitude for the duty. Courage, energy, and activity may be found in many of our non-commissioned officers and men ; but there should be also some degree of cunning, coolness, and an eye for ground, with development of the sense of locality, and, above all, the power of quick decision. The patrol commander should also have been thoroughly instructed in the details of this special service.

When the commander receives his instructions either verbal or written (in the first case immediately committing them to paper), he should first of all ascertain to his own entire satisfaction that he clearly understands them. If there is anything not quite plain, he must ask for further explanation. Should he not already know the ground he has to traverse, he must request information about it.

Before marching off, the commander carefully inspects his party, and sees that their ammunition is correct, that their rifles are in good order, and that no man has a sore foot, or a boot or stocking likely to cause one on the march. He also takes care that their accoutrements are fixed so as not to rattle, and that anything glittering on their head-dress is dulled or removed.

He must ascertain that the men perfectly understand what signals are to be made use of between themselves.

The most important of the authorized signals are :

|                      |           |  |
|----------------------|-----------|--|
| Advance or reinforce | . . . . . | Arm swung from rear to front,<br>finishing with hand pointing<br>to front. |
| Halt                 | . . . . . | Arm raised perpendicularly.  |

These signals if made with the head-dress in the hand are aid to apply to the enemy. Thus, if the head-dress is raised

up for the 'halt' signal, it would intimate 'danger,' or 'enemy in sight.'

No enemy in sight, also

negative signal . . . Hand, or hands, waved from side to side across the face.

Such signals will usually suffice by day, but in close ground, or in a fog, or at night, a few others by sound will be necessary. A whistle\* can either be used, or a call like the cry of some animal may be arranged.

In any case the commander of a patrol, before starting, should put the men through their signals, which, it must also be impressed upon them, are only to be used when necessary, and then with caution, so as not to attract the enemy's attention.

The commander of the patrol should be provided with a watch, pencil, and paper, and if possible, with a pocket compass.

The commander should read his orders to the men of the patrol, and should also explain to them, more fully and exactly, what is the object of the patrol, and where the enemy is supposed to be; he should moreover inform them what is to be their general route for advancing and for returning.

All being ready the patrol marches off, the commander selecting and pointing out to the men, as they proceed, a convenient place of assembly, in case they have to scatter before the enemy or become unavoidably separated.

If the patrol is of sufficient strength the commander will tell off a leader or point, flankers, and a rear-guard, and will indicate to each the duties they have to perform. He will

\* The whistle either as a means of signalling or of drawing attention to other signals is valuable by day or night, and its recent introduction into our service is a move in the right direction. As a means of communicating with men at some distance it is unequalled, being suitable to all weathers. The writer of this manual when in China, some years since, made use of the ordinary boatswain's whistle, to work gangs of Chinese labourers employed in constructing a line of telegraph, and found it answer admirably during twelve months' trial.

show the leader the route that is to be followed and the general direction of the march. He will tell the flankers to what interval they are to extend, and direct them to conform to the movements of the leading man. He will order the rear man or file to follow at a convenient distance, keeping the commander constantly in sight, and to watch over the rear of the patrol so that it shall not be surprised by a sudden attack in reverse.

If the commander detaches any of his party to reconnoitre to a special point, or upon any duty which separates them temporarily from the patrol, he should always specify the place for them to rejoin and make their report.

If the ground is known or the commander has a map, this is simplified, as he can select an object or place in advance which cannot be missed by the detached scouts or flanking party, such as a bridge or four cross-roads. Sometimes a landmark is visible which may serve for a place of rendezvous, but if a place cannot be determined upon the men must be directed to rejoin the patrol after a fixed period of time; in this case the intended route of the main body must be clearly explained to the detached men, and strictly adhered to by the commander.

On the march the commander must pay particular attention to the leading man, and to the flankers while he can see them, and on signal that something unusual has been perceived by either of them, he should halt the patrol and run up himself, keeping as much under cover as possible, to the point in question. If the flankers cannot see the commander on account of the ground or intervening obstacles, they transmit their signals to him through the leading man.

Should what has been signalled prove to be persons approaching, the commander must close in his men and keep them concealed and ready for action, 100 yards or so from the main route, while one of his men reconnoitres in front. Should it turn out to be a party of the enemy, he can thus in safety observe them and decide what is best to be done, before, if at all, permitting his men to be seen. On the other hand, should the persons be inhabitants, the commander may ex-

amine them if few in number, and detain, or keep back with threats if necessary, any that wish to travel on in advance of, and in the same direction as, the patrol.

If the commander wants a guide from these people he should, if he can, select one whose occupation would lead him to know the country, such as a hawker, keeper, or poacher. The guide should be treated with great kindness, unless there be reason to suspect him of treachery. In the latter case, should there be any attempt to escape or difficulty in watching the man, he can always be prevented from getting away on the march, if dressed in European costume, by removing his braces, or the strap round his waist, or his top waistband button. A man cannot run with facility while he has to hold his trousers to prevent them from slipping down.

The commander, knowing the intention with which his patrol has been sent out, should endeavour to act under all circumstances so as best to carry out the specific object in view. We have said that he must not hesitate before starting to demand further explanation if his instructions were not explicit enough. He should therefore now be able to decide in his own mind the following questions :

1. *To what point or distance is he to reconnoitre ?*
2. *Is he to look for the enemy in every direction, or in one particular quarter only ?*

The commander should always if possible have been told whatever is known of the enemy's position, for in the second of the above cases the duties of a patrol would differ, according as to whether the enemy had been already seen in a certain direction or not. The first patrol touching upon him would not reconnoitre farther than to be fully satisfied of his presence, and would at once return to head-quarters with the information so obtained ; but the patrols sent out upon receipt of this intelligence would have the more definite duties of ascertaining the exact dispositions made by the enemy, the number of his posts, the extent of his front, and any other important particulars.

3. *What must he do on meeting the enemy ?*



We have shown that he must first of all reconnoitre the enemy unobserved, but his duty should have been made so clear to him that he can also now decide whether under any circumstances he should allow his party to be seen. As a general rule a stealthy patrol would not show itself or fight. On the other hand, a reconnoitring patrol of greater strength would not hesitate to push up close to the enemy's sentries or patrols, and might even disclose its presence in order to carry out its object.

The commander of a patrol should fully understand the value of certain military indications,\* and impress upon his men their meaning and importance. Footsteps and other marks on roads, paths, or open ground, frequently betray the direction of march of a column, its composition, approximate strength, and the time at which it passed.

If the ground is evenly trodden over, the column was composed of infantry alone. If horse-shoes are imprinted as well, cavalry was probably there in addition. If there are recent ruts or wheel marks, artillery or wagons accompanied the force. The proportionate strength of these arms might be roughly estimated by the character and numbers of the several marks, the traces of many hoofs outside the wheels distinguishing cavalry from draught horses. If the tracks are fresh the column must have lately passed. Should the country be open and many marks of horses appear upon each side of the main track of infantry and artillery, it may be gathered that the enemy was pressing forward his march with cavalry on his flanks, in order to bring up his whole force together.

The dust arising from the march of troops appears low and thick for infantry columns, higher and floating away more rapidly for cavalry. Artillery and wagons raise dust in disconnected clouds not so regularly as the other arms. When the troops are some distance off, by observing the approach of the dust to certain fixed points, the direction of

\* Attention is now called in our Drill-books to the value of such indications (1889).

the march and even its rate of progress may by practice be estimated.

If reflection is seen from the arms, and it is steadily brilliant, the troops are most likely advancing towards the spectator; if the rays are duller and more intermittent the troops are probably moving away.

If the smoke as well as the light of a fire is seen, the fire is nearer to an observer than when no smoke can be discerned.

The rumbling of vehicles, neighing of horses, barking of dogs, or any other unusual noises, especially at night, indicate generally the arrival or departure of troops.

The noise which a strong column of troops makes on the march is distinct and continuous, that made by a small force not so clear and more interrupted. In calm clear weather, or if a light breeze is blowing towards the reconnoitrer, the march of even a small body of infantry, a company for example, may be heard about 500 or 600 yards off. When there is frost the sound will travel much farther.

On a clear day a reconnoitrer of good vision can discern the presence of troops at 2,000 yards with the naked eye. At that distance a single man or horse appears like a dot. At 1,200 yards cavalry may be distinguished from infantry and movements are perceptible. At 900 yards troops are clearly seen. At 800 yards the motion of arms and legs may be perceived. At 600 yards the head of a man appears as a small ball or orange to the spectator.

When a reconnoitrer stands facing the sun, he must bear in mind that objects will generally appear to be nearer to him, than when he stands with his back to the light.

Should a patrol meet with nothing unusual during its reconnaissance, the commander makes no report till his return. The report should then be made verbally or in writing, according to the importance of the reconnaissance. Reports sent back by messenger should always be written, except in great emergency when it is not possible to commit them to paper.

All reports should be as short and concise as can be.

At the head of every report should be given its number, name of writer, exact place where written, name and address of person to whom sent, with the day and hour of transmission. The body of the report should be written much in the form of a telegram, omitting all useless words but leaving out nothing of importance. Positive information, or what has been seen or heard by the patrol, should be carefully separated from second-hand information or that obtained from other sources.

The messengers selected to carry reports from the front should be sharp intelligent men, and if the report is by word of mouth they should be made to repeat it over, until they perfectly and clearly understand what they have to say.

The following form of report will be found useful :

|                          |             |    |    |    |   |          |
|--------------------------|-------------|----|----|----|---|----------|
|                          | From . . .  |    |    |    |   |          |
|                          | Place . . . |    |    |    |   |          |
|                          | To . . .    |    |    |    |   |          |
| No.                      | At . . .    |    |    |    |   |          |
|                          | Despatched  | h. | m. | M. | , | , 189... |
|                          | Received .  | h. | m. | M. | , | , 189... |
| Signature of }<br>sender |             |    |    |    |   |          |

Many of the foregoing hints for the working and proper command of small infantry patrols, will apply with equal force to those of a greater strength. The general formations would also be based upon similar principles. When a patrol of any strength, however, arrives near the enemy, it must rather extend than contract its front even at the risk of one or more men being cut off. No proper reconnaissance can be made or information obtained without this extension; and the patrol is also, should it be attacked when in extended

order, in better position to defend itself at once, every rifle being in the front line, than if it were still in the column of route formation. Here again the extension gives a certain security that one or more will get off with the news even should the patrol be overpowered by the enemy.

The two formations, therefore, which should be adhered to in working infantry patrols are, first, the route formation based on the principles laid down for the march of advanced-guards ; and, second, the extended formation, which, both for purposes of observation and purposes of defence, should be assumed on nearing the enemy.

These formations for patrols of nine or twelve men would be much as shown in Figs. 17 to 22, Plate XII.

The commander, it will be seen, usually marches with the main body in column of route and occupies a generally central position in the extended order. There may, however, be cases where, the country being pretty open, the commander may march near the head of his patrol, as shown in Fig. 21.

The second in command, should there be one, would march with the main body in route formation, and take charge of the most dangerous flank in extended order.

With a patrol of the strength of nine men or upwards, the reconnaissance or examination of the various details of ground alluded to, would be made by a point or leading group consisting of three men. The remainder of the patrol would in such case represent the column following in rear.

With a patrol of such strength the reconnaissance of large woods becomes feasible.

#### A PATROL RECONNOITRING A LARGE WOOD.

Woods, when of some extent, often afford considerable cover to the enemy. Two general conditions present themselves to the patrol :

1. *The wood is on one side of the main route.*
2. *The main route passes through the wood.*

In the first case a patrol on approaching the wood should

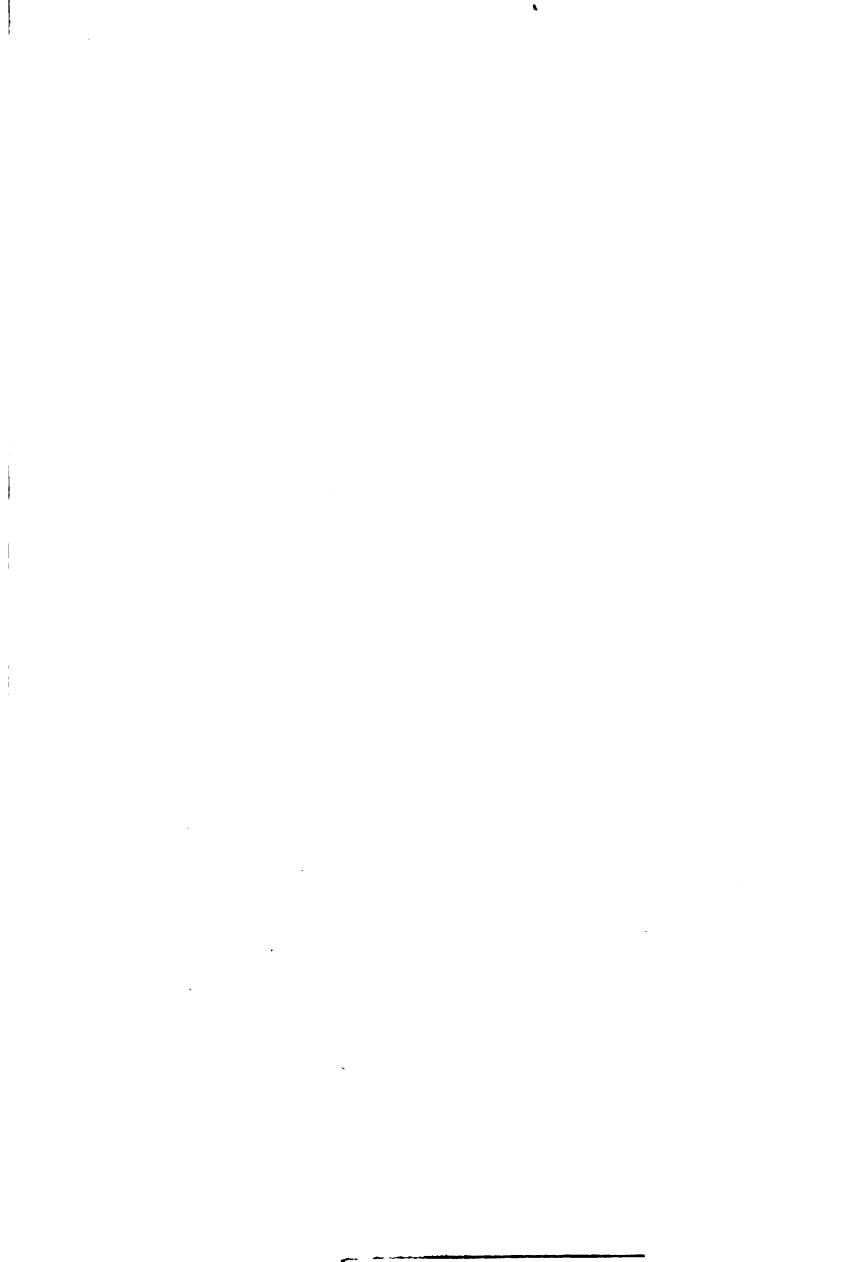
advance upon and enter it in extended order, the flanking group working up the outside edge of the wood nearest to the main road, and preserving the touch with the extended party inside.

The extended patrol pushes through the wood, the men keeping within sight or easy hearing of one another. If the wood is passable right through, they emerge on the opposite side; but if it becomes at any portion too thick or close to continue progress, the patrol must work out to the side upon which its flanking party was left. Should there be any chance of straying in so doing, the patrol must retire by the way it came, and, joining its outside group, proceed to examine the edges or borders of the wood. A part of the patrol may in such case be sent round the other flank of the wood, or to search any specially suspicious spot, but it may be assumed that those portions of the wood too thick for the patrol to penetrate through even in loose order are not likely to be occupied by the enemy.

In the case of a column following, the patrol would probably have been sent up from the support of the advanced-guard, the ordinary flanking group of the advanced party not having been strong enough to reconnoitre the wood. Under such conditions time would not admit of much delay, and perhaps complete examination of a large wood could not be made; but even if assurance is obtained that the enemy does not occupy the side of the wood bordering the march of the column, a certain amount of security for its advance is thereby afforded.

Should the main road pass through the wood, the patrol must advance along it with great precaution. The mode of proceeding here recommended is only suitable in its fullest extent to patrols of some strength, or to the advanced-guard of a column; but the general principles of reconnaissance suggested can be equally well applied to any ordinary patrol, whose numbers enable it to send on a leading group in advance of the main body.

The leading group or point of three men would first search the borders on each side of the entrance, and then





reconnoitre up the road as far as the first turn. Flankers would at the same time be detached to go round each edge of the wood, and to meet on the farther side. The point would then advance up the main road, man by man as laid down for a small detached patrol. An advanced party of the patrol would follow the point, extended across the road and on each side of it, on a front which should not exceed 100 yards even with a large patrol. A support of sufficient strength follows, marching in file on each side of the road.

The remainder of the patrol waits at the entrance to the wood, sending on connecting files to keep up communication with the advanced party and its support.

The extended order of the advanced party may be continued right through the wood, should the passage be easy; but if very obstructed the line must be contracted, and detached scouts pushed through any less dense portions to either flank. Any lateral road would be completely examined by flank patrols, and up to, or something beyond, the first elbow or turn before the advanced party passes it.

The point signals back 'no enemy in sight' on debouching at the farther side, and the main body of the patrol then enters the wood.

When the whole of the patrol has passed through and the flankers have rejoined, a further reconnaissance of the wood on each side of the road may, if time admits, be then effected, in the manner laid down for the first condition; or if the wood is further intersected by roads, these may be traversed successively by the patrol, until every portion of the wood has been thoroughly examined.

#### THE MARCH OF A FLANKING PATROL.

A flanking patrol of some ten to twenty men, furnished from the reserve of the advanced-guard or rear-guard, or from the main body of a strong patrol, or of a small column, might be sent to reconnoitre and advance along a parallel route, or to examine special details such as farm-houses, woods, or defiles some distance away upon the flanks.



Such a patrol would be considered as detached upon a specific duty whatever it might be, with orders to rejoin whenever it was accomplished, or to fall in again with the main body at a fixed place of rendezvous.

The patrol would usually advance, along a parallel route, so far as permitted by the ground, with a point, rear-guard, and special group on its exposed flank.

To take, for example, the case of a flanking patrol composed of a sergeant and twelve men, they would ordinarily be disposed on the march as shown in Fig. 1, Plate XIII. Here they are moving along a generally parallel route, with a river between the main party and the patrol.

On coming opposite to a bridge, opportunity of communicating with the main party is afforded, as shown in Fig. 2.

On the patrol coming near a bridge over which it wishes to pass, the point (reinforced from the rear if necessary) crosses over at the double, taking up the best defensive position beyond the bridge for covering the passage of the patrol. The point remains steady, until the patrol has filed across, and has resumed its march along the farther bank of the river, in the manner shown in Fig. 3.

The patrol being now between the main party and the river, the advance along the route must be secured, on coming opposite to a bridge or other place of easy passage, by a group detached to hold the dangerous point until the patrol has passed on. This is shown in Fig. 4. Here also the road which the flanking patrol has to follow, is commanded on the inner side by high ground; it will therefore be necessary to have a group on that flank, in addition to the group watching the bridge.





## EXERCISE V.

## INFANTRY PATROL.

## IDEA.

A piquet of infantry (Red) is posted on the south side of Winsley Bridge on the Pawley Road. The piquet has two double sentries, one post being near Magpie Wood, the other overlooking Drayton Farm. A strong reconnoitring patrol, under Lieutenant E., is sent out to search the village of Pawley and reconnoitre Drayton Wood. On leaving the piquet the officer sends a flanking group, of two men under a lance-corporal, to examine Drayton Farm, and also orders Sergeant W. to take five men to reconnoitre Drayton Wood, which is seen about half a mile to the front. Lieutenant E. with the rest of the party proceeds to Pawley, crossing over the fields south of Magpie Wood.

The sergeant is to send report to the commander of the piquet direct, as well as to Lieutenant E., should he touch suddenly upon the enemy.

At the same time that this reconnaissance is about to be made, the enemy (Blue) is proceeding to post piquets along the line of Churton and Wiley Hills, facing north.

## MOVEMENTS OF THE SERGEANT'S PATROL.

## FIRST STAGE.

*Red.*—The sergeant on arriving at the main road, which branches off to Pawley on the one hand and to Drayton Hill on the other hand, finds a small wood to his right front and a larger one (Drayton Wood) to his left front. He sends his right flanker through the smaller wood, to the south side of it, and two flankers, one following the other, round the north-eastern side of Drayton Wood. The leading man of the patrol proceeds

along the Drayton Hill Road which skirts the west of the wood, while the fifth man follows behind the sergeant as a reserve or rear-guard.

*Blue.*—The leading files of a piquet have just reached the plateau of Churton Hill coming up from the south.

#### SECOND STAGE.

*Red.*—The patrol advances until the leading left flanker, who is on the eastern side of Drayton Wood, ascends the rising ground and sees another large wood extending across his front and limiting his view. The man halts, and calling up his comrade who is in rear, tells him to cross the wood to the road and report to the sergeant.

*Blue.*—The piquet advances up to and through the copse on Churton Hill, part in extended order and part in support.

#### THIRD STAGE.

*Red.*—The sergeant, signalling to the other men to halt, crosses the wood, and keeping concealed at the border, examines carefully the wood in his front. The instructions he has received, are to examine the wood pointed out to him, (that which he has just traversed), and not to go farther than half a mile beyond the piquet sentries. The wood he is now watching is in reality part of Drayton Wood, (being the southern portion, separated from the northern portion by a strip of open ground), but it appears to the sergeant to be clearly another wood, and beyond the limits laid down for his reconnaissance. He feels, however, that it ought not to be left unexamined, and, although there is no sign of its being occupied by the enemy, he is anxious to see what may lie beyond. He therefore determines to push on, and ordering the left flanker to double across the open and get under cover just within the wood, he himself returns quickly to the road and sends forward the leading man, signalling to the right flanker also to advance. The road appears to traverse the new wood, and the leading man arrives at its entrance, while the right flanker skirts round the western end. The second flanker on the left follows the first one, the sergeant preserving a central position on the road, supported in rear by the remaining man.

*Blue.*—The piquet passes through the copse and halts under

cover of its farther edge, while the commander posts his extended men along the front as sentries, despatching a patrol to search the small copses near the Watermill, on the south bank of the Millbrook.

## FOURTH STAGE.

*Red.*—The patrol advances slowly and with caution, until Sergeant W. hears a low whistle from the right flanker on the edge of the wood.

The sergeant halts the patrol and joins the man, who points out to him, from the south-western corner of the wood, armed men moving on Churton Hill. Telling the man to lie down under cover, in observation, Sergeant W. passes along the south border of the wood, stationing the men of the patrol just within it, and taking care to keep himself and them well concealed. Having observed Blue's movements from two or three points of view, the sergeant is satisfied as to their object, and despatches one of the men with this report :

|        |            |  |
|--------|------------|--|
|        | From . .   | <i>Sergeant W., commanding patrol.</i> |
|        | Place . .  | <i>Drayton Hill.</i>                   |
|        | To . . .   | <i>Officer commanding piquet.</i>      |
| No. 1. | At . . .   | <i>Winsley Bridge.</i>                 |
|        | Despatched | 11h. 15m. A.M. 22.4.77.                |

*'Enemy posting sentries on hill south of stream.'*

*'W., Sergeant.'*

A similar report is sent by another messenger to Lieutenant E. at Pawley.

The sergeant and remainder of the patrol continue to observe the enemy, until the return of the last messenger, who is accompanied by Lieutenant E. and his party. Sufficient further reconnaissance is now made under the direction of the officer, the Red party on its conclusion withdrawing quietly from the wood, and returning to the piquet at Winsley Bridge.

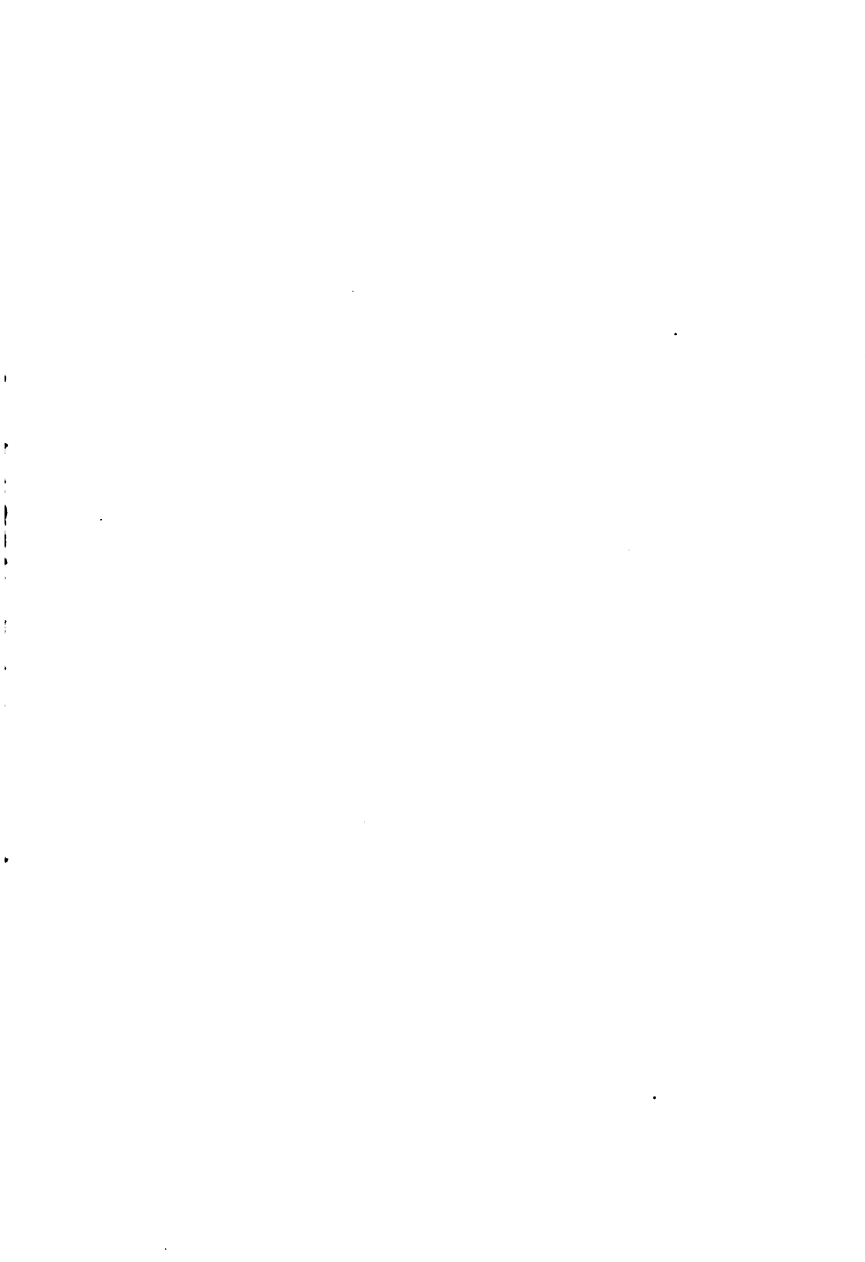
*Blue.*—The commander completes the posting of his sentries, and his patrol, after searching the copses south of the Watermill, returns to Churton Hill. A patrol is subsequently sent out to reconnoitre across the stream, and this party, in the course of its reconnaissance, examines the wood just quitted by Red, without any result.

## OBSERVATIONS.

The principal point worthy of attention in this Exercise, is the impossibility of drawing a hard and fast line, as to the limit of distance from its main body which a patrol should not exceed in its advance. Circumstances may continually arise under which discretion must be allowed to the patrol commander.

In the case before us, had Sergeant W. neglected to examine the second large wood for fear of overstepping his orders, he would have failed to gain valuable information of the enemy's presence in the vicinity. Had the wood, however, on closer inspection appeared too extensive for him to attempt to search, his best course would have been to take cover, and to send for reinforcement, which was moreover not far off at Pawley. Lieutenant E., in giving Sergeant W. his orders, should have referred to his map, instead of satisfying himself with observing the wood through his glass. Had he done so he would have known that there was a second large wood just beyond the one in sight, and he would certainly not have given orders to the sergeant, which, if literally obeyed, would have prevented his searching or examining it.

Blue should have sent a patrol earlier to Drayton Wood, which was only 600 yards from his line of sentries. Had he done so, he would in all probability have detected the presence of Red.







## EXERCISE VI.

## STRONG INFANTRY PATROL, AND INFANTRY ADVANCED-GUARD.\*

## IDEA.†

A force (Blue) bivouacked on Fenley Downs throws forward an outpost line of observation to the Tarbor River. The reserve of the outposts shortly after daybreak sends out three strong reconnoitring patrols, the centre patrol having orders to cross over Yatton Bridge, and to look out from Rainham Hill for indications of an enemy advancing from the north.

A column (Red) consisting of a strong battalion of infantry, and a battery of artillery, is marching from West Enton on Glenfield, with intent to seize Rainham Hill and command therefrom the bridges on the Tarbor River. The right flank of the column is covered by a strong reconnoitring party, sent out simultaneously from West Enton to examine Thornton Hill and the adjoining high ground. This party is composed of infantry, no cavalry being available, but a few mounted men are added to act as a communicating patrol.

The point of the advanced-guard, of the Red column, has reached Five Roads Cross.

## FIRST STAGE.

*Blue.*—The centre patrol under Lieutenant A. consists of 1 sergeant, 1 corporal, and 30 men. Passing through the outpost-line Lieutenant A. disposes his party as an advanced-guard, and

\* The writer is indebted to Colonel F. Cardew, South Lancashire Regiment, for the Idea and outline of this Exercise.

† When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

crossing Yatton Bridge proceeds with precaution through Rainham Wood. One file is sent to work round the right flank of the wood, and another file round the left flank, with orders to examine the borders thoroughly and rejoin the main party on Rainham Hill. The advance is not delayed for the flankers, the leading group or point, two men under the corporal, entering the wood at once by the main route. One man leads on one side of the road, followed by the second man at 50 yards' distance on the other side of the road, the corporal a little in rear. Six men follow, extended in line, marching right and left of the road through the wood, supported by four men, two on one side and two on the other side of the road, in single file, the whole under the sergeant. One or two connecting files keep up the communication with the reserve, which remains under Lieutenant A., at the entrance of the wood, till the leading group reaches the farther side and signals back that all is clear.

The leading man of the point on emerging from the wood crosses to the edge of the plateau, and conceals himself behind the crest overlooking Glenfield Common. He immediately observes something like troops moving beyond the stream, and summons the corporal, who comes up hastily with the other man of the group. The corporal sends back word of what is to be seen to the sergeant, who despatches two men of his party to each of the small copses on the right and left front, with orders to look out from the farther borders and to signal whether they can make out troops. The left file signals 'No enemy in sight,' the right file signals 'Enemy in sight in small numbers.'

Lieutenant A. now arrives on the plateau, and, receiving the sergeant's report, runs out at once to a point on the spur of the hill above Glenfield, whence he can obtain the best look-out to the front. He lies down in the heather just behind the crest, and with his glasses observes an advanced-guard of infantry moving up to the bridge. The morning is misty and the distance to the Five Roads Cross about a mile. He cannot make out the main column, but hears a rumbling as of wheels, the wind being north-east. Presently he sees that the leading files have crossed the bridge, and have advanced to the group of houses near the stream which are marked Wyke Farm on the map.

*Red.*—The advanced-guard consists of 150 men under Captain B.; Lieutenant C. commands the van-guard. Information from the reconnoitring party on Thornton Hill having been received, by means of signal made from Farley Hill by the communi-

cating patrol, to the effect that the flank is safe, the advanced-guard proceeds to cross Glenfield Common. The point has reached Five Roads Cross, and the bridge is seen in front, with the town of Glenfield beyond it. It is 6 A.M., and the point, pushing rapidly forward, crosses the stream, and at the out-buildings of the farm, not far from the bridge, succeeds in securing a cow-boy, from whom the information is extracted that there are soldiers on the far bank of the Tarbor River. The flanking files of the advanced party have now closed in and crossed the bridge, the stream not being fordable, and Lieutenant C. coming up and receiving the information from the commander of the point, who has run back with it to the bridge, decides to turn the east flank of the village before entering it. He sends report of what he is doing to the rear, and then prepares to move off to the left along the south bank of the stream with half the support of the van-guard, leaving the other half at the bridge, and directing the right flanking group of the advanced party to move round the west of the town. The reserve is coming up in rear under Captain B.

## SECOND STAGE.

*Blue.*—Lieutenant A. from his post on Rainham Hill observes the manœuvres of the enemy's advanced-guard, but owing to the mist still prevailing cannot clearly discern what troops are in rear. He determines to dispute the enemy's advance until he can ascertain the strength and nature of the column. He now despatches a messenger to the rear with the following report :

|        |            |                                   |
|--------|------------|-----------------------------------|
|        | From . .   | Lieutenant A., commanding patrol. |
|        | Place . .  | Rainham Hill.                     |
|        | To . . .   | Officer commanding outposts.      |
| No. 1. | At . . .   | Churton Hill.                     |
|        | Despatched | 6h. 10m. A.M. 3.8.77.             |

*' Small infantry advanced-guard approaching Glenfield from north. Head of column in rear shown by dust—can hear noise of wheels. Will dispute advance, if necessary, to learn strength of column.*

*' A., Lieutenant.'*

The mist soon clearing gradually away, Lieutenant A. makes out with his glasses the head of the main column of infantry approaching Five Roads Cross.

He sends forward the corporal and six men to occupy the northern edge of Long Wood on the west of the road, and four men to occupy Birch Copse on the east of the road, with orders to keep well concealed behind the trees. The rest of the party under the sergeant are posted behind the crest of the hill, overlooking the Glenfield Road. Lieutenant A. himself remains at his post of observation, and on the head of the main column of the enemy reaching Five Roads Cross, proceeds to time its march as it advances to the bridge. The leading files of the enemy now pass through the town and commence to ascend the hill, but their advance is checked by the fire of the men concealed in the copses. An engagement takes place, in which the Blue patrol succeeds in holding its ground long enough for Lieutenant A. to complete his observations.

*Red.*—Captain B. arrives at the bridge with the reserve of the advanced-guard, and presently receives signal from Lieutenant C.'s party, on the higher ground to the east flank of the town, that all appears safe. The point and the right flanking group then enter the town simultaneously, man by man, and march right through it. Captain B. follows with the half of the support of the van-guard left at the bridge, the reserve bringing up the rear. Lieutenant C. moves up to the Royal Arms Public-house and its enclosure. The head of the main column has by this time reached Five Roads Cross. As the leading files pass out of the town, and commence to ascend the slope of Rainham Hill, in order to look out from the summit, they are fired upon right and left by the ambushed groups of the Blue patrol. The leading files fall, and the advanced groups, which are following, double up to whatever cover they can find at the entrance of the town, and open fire in return upon the copse and wood where the enemy is concealed.

Lieutenant C. perceives that the ground to his left flank admits of a sheltered advance, and moving his party quickly there, anticipates Captain B.'s order, which he immediately afterwards receives, 'to take the enemy in flank,' by bringing up his men in extended order into position behind the bank and fences of the Glenfield-Ripley Bridge Road. Thence he opens a sharp flanking fire upon Birch Copse and Long Wood.

Captain B. sends the remainder of the support to Lieutenant C., and reinforces the parties lining the entrance to Glenfield from the reserve. The main body of the reserve he keeps behind the church, until the flanking movement by Lieutenant C. is completed.

Lieutenant C., on being reinforced, brings a hot fire to bear on Blue, which quickly drives the party out of Birch Copse on the east side of the road.

### THIRD STAGE.

*Blue.*—Until the flank attack is made by the advanced-guard the Blue patrol maintains its position with ease, the sergeant's party lining the crest of the re-entrant which commands the main road, and the advanced parties right and left in the woods, being able to prevent Red's groups at the entrance of the town from leaving cover.

On the flank attack being made by Red, the sergeant's party leaves the re-entrant, and pushes forward to the east crest of the spur upon which Lieutenant A. is posted, while the men in Birch Copse line the edge of the wood opposed to the attack. The latter are, however, soon forced to leave the copse, one of their number being wounded: they fall back and take the former place of the sergeant's party at the re-entrant.

Lieutenant A. has now concluded his reconnaissance of the enemy's column, and gives the order to retire just as Red appears about to make a frontal attack from the town.

The corporal's party is first withdrawn, from Long Wood, under cover of the fire of the men already fallen back. The sergeant's party then retires on Rainham Wood, a few files making a stand for a moment at the entrance until the party has passed down the road to the river, which the patrol now endeavours to cross as quickly as possible.

On reaching the nearest piquet, after passing through the Blue line of sentries, Lieutenant A. writes and sends on by a mounted orderly the following report:

|        |            |  |
|--------|------------|--|
|        | From . .   | <i>Lieutenant A., commanding patrol.</i> |
|        | Place . .  | <i>Yatton Hill.</i>                      |
| No. 2. | To . . .   | <i>Officer commanding outposts.</i>      |
|        | At . . .   | <i>Churton Hill.</i>                     |
|        | Despatched | 6h. 30m. A.M. 3.8.77.                    |

*'A column of the enemy's infantry, 900 strong, with a battery of artillery, has arrived at Glenfield. Their advanced-guard has already occupied Rainham Hill, from which I have just retired.*

*'A., Lieutenant.'*

*Red.*—Lieutenant C. having driven the files out of Birch Copse, has still to deal with the sergeant's party of some 20 men, posted behind the crest of the spur of the hill facing him.

He advances some of his men into Moor Copse, which is immediately to his left front, in order to come to close quarters. At the same time the right of his line keeps up a fire upon the enemy in Long Wood. At last, perceiving that he is much stronger than Blue, Lieutenant C. pushes his attack home. He is supported by a frontal advance from the town, and the enemy retires into Rainham Wood.

Seeing the large extent of the wood Lieutenant C. hesitates to follow Blue into it, but Captain B. coming up to take possession of the heights with the rest of the advanced-guard, prepares to occupy the wood with proper precautions, and to follow up the enemy in order to discover his real strength.

The main column of Red crosses the stream at Glenfield Bridge and halts outside the town.

#### OBSERVATIONS.

We have seen that the delay caused by Blue having taken up an obstructive position on Rainham Hill, has enabled Lieutenant A. to complete his reconnaissance of Red. To carry out this he is clearly justified in fighting, but the moment his object is accomplished he very properly gives the order to retire. The following are the notes made by Lieutenant A. during the reconnaissance, upon which he has based report No. 2 sent on from Yatton Hill.

1. The head of the main column under observation having reached Five Roads Cross, and the mist clearing off, infantry in fours are seen leading the way, followed by artillery in column of route, infantry again bringing up the rear.

2. It is presently evident that the artillery train consists of 12 carriages, probably therefore a battery with ammunition wagons.

3. The column takes  $7\frac{1}{2}$  minutes to pass the cross roads, *i.e.* that time elapses by Lieutenant A.'s watch, from the moment the head of the column reaches the cross roads, to the moment the rear of the column arrives at the same point.

From these data the calculation is thus made :

|   | Yards                              |
|---|------------------------------------|
| Length of the whole column . . . . .          | $88 \times 7 + \frac{88}{2} = 660$ |
| Less $\frac{1}{10}$ for opening out . . . . . | $\frac{1}{10}$ of 660 = 66         |
| Say . . . . .                                 | 594                                |

This gives the depth of the column at correct distances,







|   |       |
|---|-------|
|   | Yards |
| from which must be subtracted the depth of the battery    |       |
| of artillery with wagons, and two intervals of distance   |       |
| between artillery and infantry, $25 + 224 + 25$ . . . . . | = 274 |
| Leaving, say . . . . .                                    | 320   |

This gives the depth of the infantry alone, in column of fours.

But a column of infantry in fours occupies in depth a pace per file, and 320 yards equal 384 paces, hence . . . . .  $384 \times 2 = 768$  Men  
 or the strength of the main column of infantry.

To this must be added the advanced-guard, probably  $\frac{1}{5}$  of the whole, and therefore  $\frac{1}{5}$  of the main column  $\frac{768}{5} = 153$   
 Total . . . . . 921

Thus the strength of the whole force is approximately estimated at about 900 infantry and 6 guns.

## CHAPTER VIII.

RECONNOITRING (*continued*).

## CAVALRY PATROLS.

*Cavalry patrols* are worked on very much the same general principles which guide those of infantry ; but the distances over which they can pass, and the intervals of frontage in their formations, are of course much greater. The system of detaching groups of scouts from a patrol, if of sufficient strength to furnish them, is moreover peculiar to the cavalry service.

The most intelligent soldiers and the best horses should be chosen for patrol duty. The horses should be spared as much as possible and be fed on every opportunity. As a general rule white or gray horses, or those much given to neighing, should not be employed on this service.

The strength of a patrol will depend upon the duties it is to perform and upon the nature of the country in which it is to act. The men, at the extreme point or flank of an ordinary patrol, and all the men of a secret patrol, when in the vicinity of the enemy, should have their carbines or pistols drawn, loaded, and at the advance.

The men of a small patrol should generally ride one behind, and not as a rule alongside, one another, and be at such distances and intervals apart as to see and support each other, without being so close as to endanger all being cut off or shot down in the event of the party falling into an ambuscade.

Whenever the patrol is strong enough it should detach to its front a reconnoitrer to act as a point, and another man to bring up the rear of the party. Flankers are sent out according to numbers and requirements.

The ordinary formations on the march, of a patrol of three to five men, are shown in Figs. 1 to 8, Plate XVI.

If the strength allows of it the point may consist of two men and the flankers may be double. It should be accepted as a principle that half the entire strength ought always to be left with the main body of the patrol, whenever it is possible to do so, but with very small parties it is difficult to adhere to this rule. In the case of patrols of the strength of eight men and upwards it can generally be followed.

When searching for the enemy the intervals would be considerable with a view to an extended area of observation, but, when the enemy is touched upon, the front may be contracted. The distances should, on the other hand, be much the same in either case, and always such as to render it probable, that, if the party is suddenly attacked or surprised, some of the men may at all events escape with information.

The probable formations for patrols of eight men and upwards are shown in Figs. 9 to 14, Plate XVI.

In the last of these figures the mode of disposing the flankers, when the strength of the patrol allows of more than one group on each flank, is attempted to be shown. The figure is necessarily geometrical; but the idea intended to be conveyed, is, that they should be echeloned back from the front according as the ground admits of their use.

The power of controlling the movements of the groups of flankers in the foregoing cases, where the nature of the reconnaissance and of the ground is presumed to require somewhat rigid formations, always rests with the commander, even though they are beyond hearing distance, and sometimes concealed from view by the accidents of ground.

The flankers nearest the leading file, move on his right and left rear, at distances depending much upon the ground and varying accordingly, but, not, under any circumstances,

beyond easy reach of the patrol, or beyond clear view of the motions or signals of the leading file.

The echeloned outer flankers, if there are any, are disposed at such distances and intervals as may enable them to conform to the movements of the inner flankers, and thus to preserve to the commander of the patrol the power of directing the whole, or of receiving instant notice of danger from either extreme flank.

The leading file must not be so far advanced, that the commander cannot communicate his orders to the point by concerted signal of some kind. A signal by modified sound may be here admissible, although to communicate direct with the flankers by such means would be objectionable and often impossible.

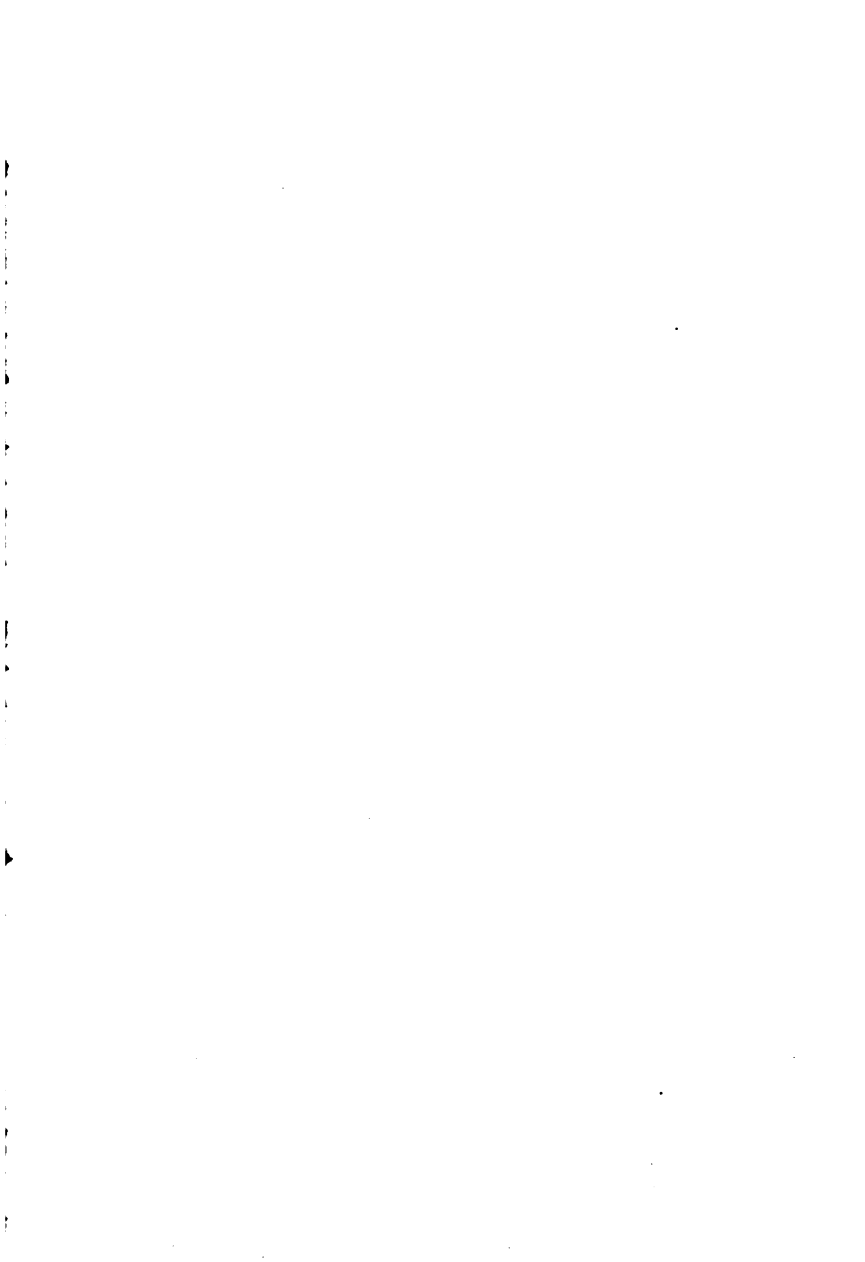
The commander having signalled to the leading file to halt, advance, or retire, the flankers conform to the movement. Should it be necessary to close in the patrol the leading file must be halted, the commander riding up to the front followed by the rear file. The attention of the flankers being directed to the leading file by the halt, they perceive the closing movement and conform to it, the pace to which they observe the commander and his rear-guard press their horses being a guide to themselves if speed is required.

When closing in, the flankers must endeavour to conceal themselves as much as possible under natural cover.

The commander can now either retire, advance, or again extend the patrol according as may be desired.

Should anything suspicious be seen on a flank while extended, the reconnoitrer observing it immediately halts ; the leading file, or the commander, whoever first has his eye on the flanker, then halts the rest of the patrol.

If the flanker, after a moment's observation, is satisfied, he moves on, and the patrol again advances ; but, if not, he signals for reinforcement and the commander rides up to him to assist in his reconnaissance. During this time the halted patrol remains on the alert, each man as much under cover as possible, and those within sight watching the commander and the flanker. The commander on examination may wish to





send out scouts ; the flanker signals again for reinforcement, and two men come up rapidly from the main body or from the other flank. The scouts being sent out with special instructions, and clear directions where they are to rejoin, the patrol may again advance.

With regard to the signals which should be used, those laid down for infantry are so arranged as to answer equally well for cavalry, and it is evidently of great importance that the two arms when acting together should make use of concerted signals, which can be mutually understood.

The most important of the signals to be used by cavalry reconnoitrers are :

|                                   |  |
|-----------------------------------|--|
| Advance, or reinforcement . . . . | Arm swung from rear to front, finishing with hand pointing to front. |
| Halt . . . .                      | Arm raised perpendicularly.  |

These signals if made with the head-dress in the hand are said to apply to the enemy. Thus if the head-dress is raised up for the 'halt' signal, it would intimate 'danger' or 'enemy in sight.'

|   |   |
|---|---|
| No enemy in sight,<br>also a negative<br>signal . . . . | Hand waved from side to side across the face. |
|---|---|

As with infantry patrols, also, the limited use of the whistle, as a means of attracting attention, or even of signalling in dark or dull weather, would much assist the working of cavalry patrols.

It must not, however, be supposed that signalling of any kind to an unnecessary extent is here advocated. All signalling on patrolling duties must be carried out under difficulties. At the moment of first observing that the enemy is close at hand, a reconnoitrer's best chance of remaining unseen is to keep perfectly quiet and motionless. He cannot therefore signal without betraying his presence. Should he remain, under such circumstances, halted, and evidently in



observation, the commander of the patrol, without any signal, should ride up cautiously to his assistance, keeping well under cover during the move.

By such careful observance of the rule that signals should only be employed by secret reconnoitrers when they can be made without fear of attracting the enemy's attention, there is little doubt that they may be of great assistance in sparing the horses, and in facilitating the general object to be attained by a cavalry patrol.

Before leaving this subject we must refer to the signals, laid down for use in our cavalry service, for vedettes, which might occasionally be available for the communications from one group of scouts to another.

These signals are only applicable to ground which will admit of a mounted man cantering round in a small circle so as to be seen by the person to whom he is making signal. If the enemy's cavalry is approaching, the soldier circles to the right; if he sees the enemy's infantry, he circles to the left. For a mixed force he describes the figure of eight, and the faster the pace at which he circles the greater is supposed to be the force of the enemy and the more rapid his advance. Such signals can be seen a long way off, and have therefore some advantage in that respect, but they are not so generally suitable, for evident reasons, to the service of reconnoitring as the modified code above recommended.

Cavalry patrols of the strength of four men and upwards may send out 'advanced scouts' as reconnoitrers on detached duty. These scouts are not bound to the patrol as regards their movements in the same manner as the leaders and flankers above alluded to. On the contrary, they work freely in advance or on the flanks as may be directed, the closeness of connection maintained varying with the nature of the service upon which the patrol is employed. The scouts detached from the centre group, or from the flanking groups of the advanced party of an advanced-guard, are kept much nearer to their supporting body, and to each other, than are the scouts of detached patrols upon other reconnoitring duty.

In the former case, the intervals between the groups of scouts should not be more than the limit of seeing distance by day, and of hearing distance by night, with due regard of course to any special circumstances of weather or of ground—as for instance in very close country where the scouts, having to advance by separate roads, cannot keep each other continuously in sight.

In the latter case, the scouts of a detached reconnoitring patrol may work more independently, keeping up connection with their main body by touching upon it at fixed places, or by one of a group riding in, with information, to the general route previously determined upon for the advance of the patrol.

Advanced scouts should almost always be sent in pairs, one of the two men in command. There may be occasions where circumstances render it difficult to observe this rule, in which case one man may be detached as a reconnoitring scout; but it is far better they should be in groups of two, so that one may continue to observe the enemy, while the other takes back information of his having been seen.

The scouts and detached men of a patrol should march with their fire-arms drawn, loaded, and at the advance, as laid down for a small patrol. They should not, however, give signal by firing unless there is no other method open of conveying back the information, and they are certain they have been seen by the enemy. If surprised, or if it is necessary to give instant notice of the enemy's proximity, they should immediately fire.

It is generally better for patrols not to return by the road they took in marching out: by varying the route they will go over new ground, thus collecting more intelligence, and will also be less likely to fall into an ambushade arranged for their homeward march.

The cavalry patrol must adapt its mode of reconnaissance to the nature of the locality or ground in much the same manner as the infantry patrol. The student should therefore read over the suggestions already offered, for conducting the operations of the latter under various conditions, and consider

how far they apply to the case of a mounted patrol. In order to assist him in noting some distinctive differences, we will take the case of the cavalry point, or centre group, of an advanced-guard, and observe how it would act under various circumstances as the leading patrol of a column of troops.

#### MOVEMENTS OF A SMALL CAVALRY PATROL.

The patrol, or point, in this case, consists of a non-commissioned officer as commander, and four men, two of whom are detached 100 yards to the front of the group as advanced scouts. The scouts march one on each side of the road but not quite abreast of each other, if the country is close, and one behind the other some yards apart, if the country is open. The other men march with the commander on the main road in a confined country, and more or less separated from him to either flank if the country is open.

*General examination of ground.*—The advanced scouts, and the flankers also when detached, must carefully search every spot on their route which might conceal an enemy. When they come to a corner or turn they must check their horses and cautiously look round it, before riding on. If they cannot examine a place by themselves on account of its extent, they should either signal for reinforcement from the rear, or one man should ride back for it, while the others remain concealed till his return.

*Approaching high ground, whether on the route or near it.*—One of the scouts should ride up the high ground, if it is possible to do so, in advance of the other scout, who falls a little to the rear. The commander continuing to advance, moves up towards the scouts, the remainder of the party halting. The leading scout reconnoitres from behind the crest of the hill, keeping himself, as much as possible, out of sight from the front. If he observes anything suspicious, he beckons to the man behind him to come up, and sends him back to the commander with the information ; or else the commander himself may ride up and consult, while the second

scout falls back on to the road, keeping the others in full view and ready to transmit any signal to the rear.

*Encountering obstacles on the route.*—Should the point meet any obstructions on the main route, such as temporary barricades, trees felled across the road, or carriages overturned, the commander must endeavour to make his way round so that the party may reconnoitre. He should at once send a man back for assistance, unless the obstruction is so very slight that half of his party can remove it while the others keep guard and look out. If a bridge is found to be broken, word should be sent to the rear, and the point must endeavour to find a ford or other place of passage in the immediate vicinity.

*At a defile.*—Should the sides of the defile be easy to mount, the flankers will ride up to reconnoitre before the leading scouts enter. Then the latter trot through at a smart pace, one in advance of the other, followed at a little distance by the commander.

If the sides of the defile are not accessible for a mounted flanker but would yet afford a good look-out if they could be scaled, one of the men may dismount while another holds his horse. The advanced scouts must not ride through till the flanker returns and again mounts. The pace should then be quickened to make up for the delay.

If the sides cannot be climbed the point must trot rapidly through the defile man by man at distances of 100 yards. On reaching the far side the commander must take up a position to defend the entrance until the next party in rear appears.

If the defile is of any extent the examination of the heights on either side would be undertaken by the flank groups in rear, and the point would in such case ride at a trot through the defile in the ordinary order of march on receiving the signal to advance.

*At a wood.*—If the wood is small and traversed by a path or road, the advanced scouts rapidly examine the borders on the near side, and, if nothing is seen to indicate the presence of an enemy, at once trot through the wood. The commander

remains outside waiting for a signal from the scouts. When these reach the far side of the wood they halt and observe carefully from the border, before debouching or allowing themselves to be seen. They then communicate with the flankers who have been riding round the outside of the wood, and signal is passed to the rear.

If there is no path the same mode of examination can only be followed when the trees are thinly planted, without undergrowth, so that mounted men can ride through them. In such case the advanced scouts would go right through the centre of the wood, the flankers riding round the borders, the commander in rear of the latter.

If the wood is very large it will be difficult for a party of five men to search it thoroughly. All that they could do, without delaying the column, would be, after first examining the borders on the near side, to ride quickly up all the paths in two groups, looking out sharply for signs of the enemy's presence, and listening for the tread of troops on the march, sending back report at the same time that further search is necessary. A party coming up from the rear could then examine the wood, on somewhat similar principles to those suggested for an infantry patrol under like conditions.

Thus, if the trees allow of mounted men passing freely between them, the patrol might extend across the whole or a portion of the width of the wood and go right through it. Or else a space of fifty yards to each side of a main route through the wood might be so examined, a leading group preceding the extended party of the patrol, and flanking groups being pushed up every road or path, or even through the wood itself, to either flank, as required.

Should the wood be without paths and so thick that a mounted man cannot enter it, the point must content itself with examining the borders. If anything suspicious be seen a portion of the party may dismount and make further search.

*Approaching habitations or a village or town.*—The scouts in front should make a preliminary reconnaissance, and if they see no signs of the enemy, they should ride up to

the first house and make inquiries. While in this close vicinity to habitations two men must never separate ; if one man has to go into a house the other holding his horse remains at the entrance. The first man should not get beyond communicating distance by voice from his comrade. One of the inhabitants may perhaps be detained by the scouts till the other men come up. The place may then be examined in detail if the answers to inquiries are satisfactory. Should no preliminary intelligence be obtained the two advanced scouts should gallop past the houses one after the other and then return to say what they have seen.

Should the place be a village of some extent, greater precaution must be taken, and, while the advanced scouts endeavour to obtain information, the flank groups of the advanced party should come up to examine the sides and outskirts of the town. The leading scouts then ride rapidly through the main street one after the other, looking out for signs of an enemy or for any hostile demonstration of the inhabitants. They have their firearms ready to give instant signal if required.

The commander of the point remains at the entrance of the village, till the scouts come back or signal that it is clear of danger. Should the enemy be present in the village in any strength and not retire on appearance of the scouts, the point and flank groups must fall back at once on the support.

Should the place be large it will take more men to examine it, and the point should wait until the support comes up before entering the town.

In approaching an inhabited place by night the point of cavalry should take the precautions laid down for an infantry patrol under similar circumstances.

#### RECONNOITRING AND SCOUTING DUTIES OF PATROLS.

A reconnoitring patrol of cavalry should in general avoid fighting if it can possibly do so. To send back correct information of the enemy's force and dispositions is a much greater gain than to defeat a hostile patrol, and force should

only be resorted to, under ordinary conditions, when all other means have failed for effecting a retreat.

There may be cases, however, where a line of patrols covering their front with scouts are required to hold their position in advance of other troops, or to drive in the enemy's line of scouts to prevent his attempts at reconnaissance.

In such instances special orders would be issued as to the application of force, unless a general instruction be given to hang on to the enemy and continue to observe him whether he retires or not. The patrols would in the latter case be bound to hold their position until driven back by greater numbers, and, while keeping all patrols of equal strength in check, they should compel the weaker ones to retire before them, some of their scouts meanwhile endeavouring to gain information by working round the flanks.

If within hearing of the main body of troops, the same rules for firing to give the alarm on being seen by the enemy hold good for cavalry as for infantry patrols. If a patrol cannot escape as a body or cut its way through, the commander may give the word to disperse, so that, at all events, some one of the party may get off with information. Should there be no necessity for immediate report, it may sometimes be allowable to retreat in the opposite direction, and return by a detour under cover of darkness.

Should a hostile force be met with, the patrol must not imagine it has done its duty by falling back to make report. If the patrol is a secret one it should keep concealed, and hang on to the enemy, watching, observing, following, and keeping up the touch with him, while sending report of his presence by messenger to the rear. If the enemy perceives the patrol and presses it, the special aptitude of cavalry for this duty enables the men to scatter, again to collect and get into touch with him, and to continue to hover about him in observation, until finally the patrol is relieved in its watch or the enemy retires altogether.

If the patrol is of greater force, it may have received instructions to push home its reconnaissance on meeting

the enemy, and to obtain information by more demonstrative action.

In any case, it is only when the enemy is first touched upon, that the real work of cavalry patrolling may be said to have commenced: the results to be obtained therefrom assuming their highest value and importance from this time.

#### SPECIAL DUTIES OF THE COMMANDER OF A SMALL CAVALRY PATROL.

The commander of a cavalry patrol has much the same responsibility as the commander of an infantry patrol, and his duties are for the most part similar. The student will, notwithstanding, do well to inquire into many distinctive details incidental to the mounted service.

Before starting the commander should see well to his horses, and ascertain that they are all fit for the march, and that none of their shoes are loose. The swords of his men must be securely hooked up, or placed between leg and saddle to prevent them from rattling and banging about. No loose tins or other articles that could make a noise when in motion should be allowed. Shining surfaces should be dulled or smeared with mud.

The commander having received and understood his orders, should communicate them in such distinct manner to the men that each one of them could carry on the duty of the patrol in case of part of them being taken, or in the event of the patrol having to disperse. The commander also names a place of rendezvous, for the men to meet at, in case of their becoming separated.

The patrol then marches off, the commander, when clear of the bivouac, taking the precautions shown in the various formations we have alluded to, according to the strength of his party, the features of the country, and the nature of the duty upon which he is detached.

When the patrol is a small one, of the secret nature, the more rigid formations must be preserved in the advance, and the same care and caution exhibited in reconnoitring, as we



have prescribed for the infantry patrol. The commander must, however, in addition take care that he never allows his men to enter upon ground that is unsuited for the movement of horses, and he must not forget that a cavalry soldier suddenly finding an insurmountable obstacle barring his only means of retreat, is securely caught in a trap. A mounted man should therefore not be permitted to enter an enclosure that has not a free passage through it, unless a comrade remains at the entrance to preserve for him means of retreat. Nor should he go inside a wood, unless it is thinly planted so as to allow of horses passing between the trees in every direction.

A strongly developed sense of locality is even more necessary for the commander of a cavalry, than for the leader of an infantry, patrol, because the distances over which the former has to travel are greater. The commander should therefore have a good eye for ground, be able to read a map and to find his way about by it, and also understand marching by the compass.

The commander must never forget the object he has in view, that of obtaining information of the enemy, and no means must be left untried to collect intelligence. Should the party not touch on the enemy he must make the most diligent inquiries wherever he can, as to when they were seen, in what strength, and with what kind of troops. How long they halted, and in what condition they were at the time. What they did while they were halted, what road they took on leaving, whether they took guides with them, and if so whether these have since come back again. Post Office and other officials, clergymen, shop-keepers, hotel-keepers, and hawkers will generally possess the best information. Children should also be questioned, since they will probably tell what they know.

The commander must carefully select his main route and adhere to it, should his patrol be strong enough to send out detached men or scouts, taking care as regards the latter that he does not uselessly fritter away his men. He must also see that the scouts sent out distinctly understand how they are to keep up their touch with him, and where they are to rejoin him. Nothing can be more disconcerting to the commander of a

patrol than to miss his scouts at the time or place at which they should come in. He does not know whether they have lost their way, or whether they have fallen into hostile hands, and his further action is often dependent upon their reports, which he does not receive. The position also of scouts who have lost their way, or who have not hit off their party at the place of rendezvous, is one of difficulty. In the attempt to find their commander they constantly wander about in an aimless manner, and end by losing themselves altogether.

Unless the scouts have been previously well drilled and practised in this respect, the commander will have a difficult task. It is by no means easy for the scouts of a cavalry patrol, especially in a new and unknown country, to work in such an independent manner, as to cover sufficient ground and procure information from a large enough circle, and yet to preserve such cohesion with the main body, as will ensure the result of their investigations being promptly conveyed to the proper quarter. Nothing but constant and steady practice of patrolling in time of peace, can ensure the cavalry soldier being prepared to perform his part efficiently in this respect in time of war.

When the commander finds it necessary to halt for the purpose of feeding or watering the horses, he must be careful to select a lonely and isolated spot, where he can easily guard against surprise by posting look-out men. He must never halt near inhabited places, least of all in the immediate vicinity of an inn or house of refreshment. In no case must men be separated from their horses.

A cavalry patrol at night must place more reliance upon its ears than upon its eyes; the commander should therefore often halt for the purpose of listening, one man occasionally dismounting and placing his ear on the ground. The horses themselves are an assistance at night, in giving the earliest notice to their riders of anything unusual occurring, or of the presence or near approach of men or other horses. The vision and hearing of a horse being much superior to that of a human being, the commander should impress upon his men

the necessity for quick attention to the slightest warning from this quarter at night.

It is sometimes necessary to bring in a prisoner for the purpose of obtaining exact information. The commander would in such case have received special instructions to endeavour to cut off some of the men of a small patrol of the enemy, or else to pierce the outpost line secretly between two posts so as to carry off one of the sentries, or generally to hover about the enemy until the object in view can be effected.

Should the commander have been instructed to follow the enemy and to keep a watch upon his movements in retreat, he should also have been distinctly informed how far he is to go in pursuit. He should be careful not to exceed this limit whatever it may be, and he must take especial care not to be surprised or cut off. With this view he should act in every respect as a secret patrol.

If the patrol is intended to preserve communication between portions of troops which are in action or on the march, the commander should keep his party in an intermediate position, detaching flankers to retain the touch with the troops on either side. The position and movements of the troops on one flank are immediately reported to the other flank by means of the communicating patrol, and unity of action is thus maintained.

In making their reports on return or in transmitting them from the front, cavalry commanders of patrols are guided by the same rules as in the infantry service ; but the distances passed over are much greater in the case of the cavalry patrol, and the duration of the duty generally longer, than with the infantry patrol, so that in the former service there is more frequent occasion than in the latter to send back reports from the front by messenger.

#### SCREENING AND RECONNOITRING DUTIES OF CAVALRY IN ADVANCE OF THE ARMY.

The duties of the detached cavalry reconnoitring in advance of the army, are conducted, so far as elementary

details are concerned, in accordance with the principles above discussed under the head of Patrols, but some distinctive features of this special service require further remark.

When an enemy is at a distance and his movements are unknown, he is often more to be feared than when close at hand and under observation. He must not therefore be lost sight of because he is some way off; but on the contrary, he must be watched, in such a manner as to observe his movements closely with a view to estimating his designs, and at the same time to prevent his attempts at reconnaissance with like intentions.

A fatal mistake is too often made by cavalry, in supposing that it is sufficient to reconnoitre the enemy and return with a report, or even to reconnoitre in a certain direction and report that no enemy is seen.\* It is not only necessary to find the enemy, but, when found, to keep him under constant observation.

For this purpose detached bodies of cavalry should be advanced to the front of an army, interposing between their own troops and the enemy a veil or screen, behind which there is immunity from surprise, and in the extreme front of which feelers or reconnoitrers are actively employed, collecting intelligence for transmission to the rear.

These duties would be either performed by the 'divisional cavalry' or by the 'cavalry division,' according as the operations are on a small or on a large scale. By the former is meant the cavalry attached to an infantry division. If several divisions are acting together, the cavalry of each would cover the immediate head of its own column on the march, reconnoitre the country to its front and flanks, and link the column to others; just as in action it would fight on the flanks of its own division, join in its success or help to cover its retreat. By the latter is meant the division of cavalry, which is an independent tactical body, having relations to the whole army of a similar nature to those borne by the divisional

\* This habit of the French cavalry led to many surprises of the other arms being made by the Germans in 1870.

cavalry to its own division. It therefore furnishes the advanced cavalry for screening and reconnoitring duties far to the front, when several columns are moving forward in combination, the divisional cavalry being answerable for the scouting in the immediate vicinity of the columns. Should a division or smaller column of the three arms be acting independently, a portion of its cavalry would generally be detached to the extreme front for a similar purpose.

A force of considerable strength is usually employed on this important service. The principle adopted is that of retaining a support in rear, from which smaller parties are detached to the front and to the flanks, these parties in their turn sending out still smaller fractions, until the whole assumes the form of an open fan, upon the outer edge of which the patrols are reduced to a strength of some eight to ten men, which in their turn may be covered in extreme advance by groups of scouts of two or three men together. This action of the cavalry may perhaps be best appreciated by its being described as a moving outpost chain. The squadrons detached to cover the front are called contact squadrons, and the patrols which they send out in order to establish touch with the enemy, are commanded by officers or non-commissioned officers. The squadrons kept in support constitute the main body of the covering force.

A regiment of cavalry may thus be sent out to a distance, varying, according to circumstances, from ten miles to one or two days' march, in advance of the army it serves to cover. One squadron moves still farther to the front, one to each flank, while the remaining squadron acts as a support to the others.

Each of the three contact squadrons now in extreme advance sends out patrols to its front and flanks, as required by the nature of the ground and supposed position of the enemy. The rest of the squadron, consisting of from one-third to one-half of its strength, remains in each case in rear, moving along a central route. The patrols in their turn detach advanced scouts so that every part of the ground may be thoroughly examined.

The distances to which the contact squadrons should proceed from the squadron in support, and also the intervals to be preserved between the squadrons in advance, must depend so much upon the nature of the country and upon the position of the enemy, that it would be hard to frame any absolute rule on the subject.

It is, however, suggested in the Regulations that, while the advance should be extended as much as possible in order to avoid employing too many men upon the service, care should invariably be taken that all the bodies in front be able to fall back securely upon their supports, in case of the enemy being met in force. It is recommended, that the distance to which each patrol may detach itself from its immediate support be restricted to five or six miles, or as much ground as can be passed over in one hour in ordinary country. On occasion, however, an officer's patrol may be despatched on independent service for much longer distances, relying entirely upon its own resources.

We have seen the manner in which patrols should be conducted under ordinary circumstances, and we have therefore only now to remark, that connection with the reconnoiters in the extreme front, cannot be closely kept up in working the advanced cavalry. It frequently becomes necessary for scouts and patrols to be sent to considerable distances from their supporting body; but each patrol, though out of sight and hearing of the next, should always know the general position of the patrols on either flank, and of the squadron from which it is itself detached. Each advanced squadron should also know the position of the neighbouring squadrons and of the main body.

When the screen is formed by a division or brigade of cavalry, the front which can be covered varies according to the ground, and the strength, as well as proximity, of the enemy. Against civilised troops and in cultivated country, from ten to twelve miles will be the usual limit of front. This extent admits of news being brought in from the extreme flanks without undue delay, to the central route followed by the commander of the force of cavalry.

A brigade of cavalry if acting alone, as would often happen in our organization, would probably have a battery of horse-artillery attached to it for this duty. The exact formation to be adopted must be left to the commander, but a possible disposition would be to let two regiments furnish the necessary contact squadrons, while the remainder of the brigade (with the guns) would follow as main body. In a close or cultivated country the contact squadrons would each move on a separate route, an immediate support following the centre squadron of each regiment, and the number of contact squadrons required, would depend on the number of main roads available within the limits of the front taken up. In an open country half the number of contact squadrons might cover the same ground ; the remaining squadron or squadrons in each advanced regiment being kept in hand by the commanders, in a central position as regards their own contact squadrons, to act as a local support at any part of the front where its presence might be required.

The cavalry force, however, engaged in this duty should avoid fighting, unless the enemy's screen cannot be otherwise pierced, or with a view to establish a moral superiority, or to prevent the enemy breaking through the screening force.

The rear regiment will always detail a rear-guard to follow the force of advanced cavalry.

#### CONNECTING POSTS.

In proportion as a reconnaissance is pushed farther to the front the necessity for maintaining some system of constant communication with the rear becomes more apparent.

It must be regarded as a first essential condition, that the intelligence procured by a reconnoitring party be transmitted at once to its main body. It is also needful that a detached patrol should be in a position to receive orders from the rear as quickly as possible. Hence arises the necessity for connecting posts, when reconnaissance is being carried on at some distance in advance of the main body.

The posts are placed on the main routes, generally at positions which can be easily found, such as bridges or re-

markable or well-known buildings, and they are established by each detached party as it proceeds to the front.

The posts will as a rule be about five miles apart, but if men can be spared the intervals may be reduced with advantage to two or three miles, or the distance which an orderly could, in case of necessity, pass over at a gallop without pulling up.

The best strength for a post is a non-commissioned officer and six men, but in any case it should not consist of less than three men, one of whom must always be ready to mount at an instant's warning, whenever a messenger is seen approaching, for the purpose of carrying on the despatch to the next post.

The orderly who brings in a message returns to his post after a short rest, and takes back with him any orders for his party.

The pace at which an orderly should ride, the exact place and hour of despatch, should be written on the outside of the message.

#### COMMUNICATING POSTS AND PATROLS.

As connecting posts are established to keep up connection from front to rear, so communicating posts and patrols are intended to facilitate the lateral communications of advanced squadrons during their operations, or of parallel columns on the march. Communicating posts are placed at points distinctly shown on the map, between the routes to be taken by the advancing troops. Three men form a post, one of whom is always ready to mount. Communicating patrols ride across from one column to the other, and keep up communication in this way.

#### STRONG RECONNOITRING PARTIES.

A strong reconnoitring party would be detached, either from the main body, or from the reserve of the advanced covering detachments, *i.e.* from the reserve of the advanced-guard on the march, or from the reserve of the outposts at the halt.



The commander would receive before starting the most precise instructions as to the object to be effected. He may be ordered, for instance, to search for the position taken up by the enemy, and to ascertain the numbers of his troops by such indications as come under observation without disclosing his own proximity ; or he may be directed to feel for the enemy in a particular quarter until he hits upon him. Or again he might be directed to report on the resources of the country, the facilities and obstacles it presents for advance, and the general lines of communication.

Strong reconnoitring parties may push their reconnaissance far beyond the zone of the smaller reconnoitring patrols. They are generally ordered out by the general or brigadier, their force and composition depending much on the nature of their mission and of the country, and on the necessity or non-necessity of concealing the march of the party.

A troop of cavalry is often sent on such a duty, a staff officer accompanying the force. If the country is close, hilly, and wooded, infantry may be selected in preference, a few mounted men being attached as orderlies ; but more usually still in a varied country, infantry is joined to cavalry as its support. The infantry would accompany the cavalry to certain points, past which the horse must fall back in retiring. These points the infantry would hold to secure the retreat of the cavalry, which latter would then advance rapidly to the front to complete the reconnaissance. The cavalry in its turn would cover the retreat of the infantry across any open ground.

If mounted infantry, with attendant machine guns, are available, they would probably take the place of other infantry as being more mobile, in cases where the presence of this arm is desired. The addition of such troops gives to reconnoitring parties of this kind a strength and power of resistance which cavalry can never attain by itself. The employment of artillery tends towards a similar end, and the especial mobility of horse-artillery renders it appropriate for such service. Artillery is nevertheless seldom added to an ordinary reconnoitring party, its use being generally con-

fined to a reconnaissance in force, or to a special reconnaissance.

But although guns are not much employed upon this kind of duty, there may still be occasions where artillery would prove a useful addition to the other arms, as, by its assistance, woods or other suspicious places, within range, could be effectively examined or cleared of the enemy's presence, without the necessity of a close approach. Guns can also cause the withdrawal of parties of the enemy from small defensive positions by acting on their flank.

Whenever cavalry and marching infantry have to act together in a strong reconnoitring party, cavalry is always well to the front in the advance, so long as the ground permits. The infantry in rear takes up successive positions favourable for defence, as it advances, so that if at any moment the cavalry is driven back it will be protected in its retreat by the infantry.

In the return march the infantry takes the lead, unless hardly pressed in a close country, when the cavalry is sent on in front.

## EXERCISE VII.

SMALL CAVALRY PATROL, AND POINT OF INFANTRY  
ADVANCED-GUARD.

## IDEA.\*

1. A cavalry patrol (Blue), corporal and four men, is sent over Totley Bridge to reconnoitre and examine Pawley Village.

2. The centre group of infantry advanced-guard (Red), coming up from Wolverton, has orders to push on and occupy Pawley.

## FIRST STAGE.

*Blue.*—The leading file has reached the west corner of Magpie Wood and halts. The left flanker has reached the east corner of the wood and halts. The right flanker is to the right rear. The corporal has halted on the hollow road behind summit of the hill, keeping his leading file in view. The rear file supports the corporal at 100 yards' distance. (Fig. 1, Plate XVII.)

*Red.*—The centre group of infantry advanced-guard, sergeant and four men, has reached the high ground south of Pawley Village, between the Wolverton Road and Pawley House grounds. One man is detached 200 yards to the front as a scout, to observe the village from behind a mound near the crest of the hill. The scout taking advantage of the ground reaches his position unobserved, and obtains a good view to the front. The remainder of the group halt. (Fig. 1, Plate XVII.)

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

## SECOND STAGE.

*Blue.*—The leading file summons the corporal to consult, the rear file moving up to the corporal's place. The corporal then gallops along the north side of the wood to the left flanker, and returns to the leading file. From neither point of view is anything observed to indicate the enemy.

Both reconnoiters and the corporal, while observing, keep themselves concealed as far as possible behind the corners of the wood.

The corporal decides to send two of his men through the village. (Fig. 2, Plate XVII.)

*Red.*—Despite the precautions of the cavalry, the presence of the leading reconnoitrer at the west corner of the wood is noted by the infantry scout, who is himself concealed by the ground. He summons the sergeant to consult. The latter, on coming up, catches sight for an instant of the other reconnoitrer east of the wood. Inference therefrom: as the enemy is reconnoitring the village, he does not already hold the village.

The sergeant determines to push into Pawley, unobserved if possible, and to hold the north entrance to the village, signalling to the rear for reinforcements to hurry up. (Fig. 2, Plate XVII.)

## THIRD STAGE.

*Blue.*—The corporal calls in his right flanker to act as support to the leading file, who is directed to ride at a smart trot, 200 yards in advance of his support, down the road and through the main street of the village.

Should any signs of the enemy be observed, he is to signal by firing his carbine, and to retire with all celerity. Should the village be unoccupied by the enemy, all possible information to be procured.

The corporal remains at the west corner of the wood, left flanker and rear file as before. (Fig. 3, Plate XVII.)

*Red.*—The man sent forward as scout, is left in the same position as a look-out sentry. The sergeant signalling to his party to advance up the road, joins them, under cover of a hedge, and, sending back one man with a message to the rear, succeeds, by a cautious advance, in establishing himself at the far entrance to

the village with the other two men. Here cover is afforded by fences and buildings, and the sergeant posts himself so as to receive signal, if necessary, from the sentry on the hill, and at the same time to keep in view the west end of Magpie Wood. Up to this time his presence is evidently unperceived by the cavalry. (Fig. 3, Plate XVII.)

#### FOURTH STAGE.

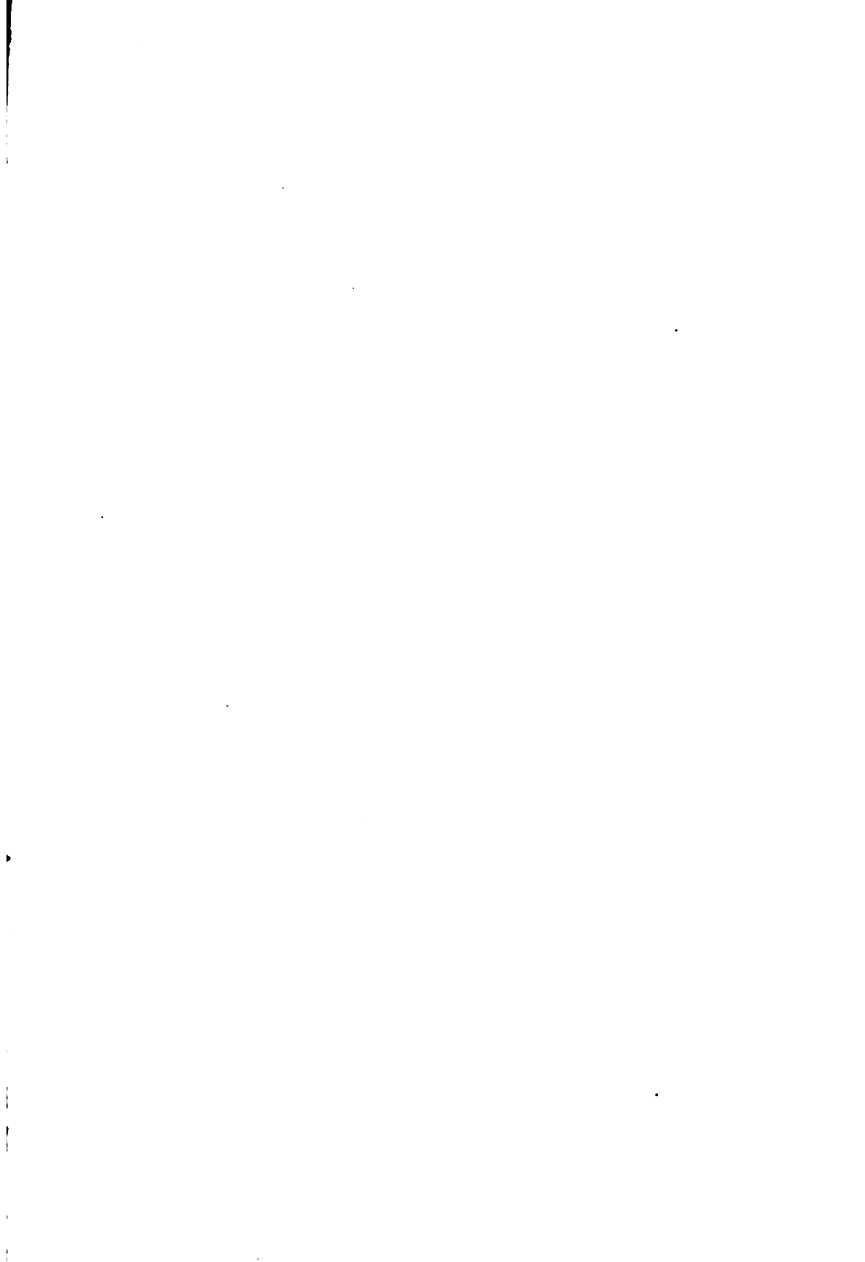
*Blue.*—The file in advance, on arriving within 150 yards of the village, receives the fire of the group of infantry concealed at the entrance, and falls. His comrade in rear immediately retires at a gallop, being fired at ineffectually, at 600 yards' range by the infantry man on Pawley Hill.

The corporal gives the order to retire at a trot. The rear file becomes the leading file, the left flanker closes in at a gallop, and the former right flanker becomes the rear file of the patrol. (Fig. 4, Plate XVII.)

*Red.*—The sergeant orders his men to lie close, placing themselves in such positions as to command the road coming from the north. Fire is reserved until the leading reconnoitrer comes close, so as to ensure his not entering the village, and perceiving the paucity of numbers by which it is held. As the patrol retires a rapid fire is kept up to deceive the enemy as to numbers, for it is not known what force of cavalry may be behind the wood. The sergeant and his men remain in the same position. (Fig. 4, Plate XVII.)

#### OBSERVATIONS.

The cavalry patrol has so far obtained information, at the sacrifice of one of the party, as to know that Pawley Village is occupied by the enemy's infantry. It would now be the duty of the corporal, on retreating behind the hill, to send one man at a gallop to the rear with this news; with the remainder to form up again and still endeavour to hang on to the enemy. The centre group of infantry would continue to hold the village, until reinforced, a few moments later, by the rest of the advanced party of the advanced-guard.





**EXERCISE VIII.****A CAVALRY PATROL ON ADVANCED RECONNOITRING DUTY.**

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**IDEA.\***

A regiment of cavalry (Red) of four squadrons, part of the advanced cavalry of a force coming from the south, is disposed thus:

1st squadron advancing by Bitterne to Danmoor;

2nd squadron advancing by Erley and Minton to East Enton;

3rd squadron advancing by Wolverton and Baddeley to Weston;

these are contact squadrons, after them comes the

4th squadron following in support through Erley.

The advanced squadrons are to scout for the enemy (Blue), who has been reported to be in the neighbourhood of Northam.

Of these the 2nd squadron covers its front by patrols:

1. A right patrol, of an officer, a sergeant, and 12 men, to cross the river at Sutton, and reconnoitre the left bank of the East Tarbor, communicating with the left patrol of the first squadron;

2. A centre patrol, of a sergeant, a corporal, and 10 men, to examine the ground about Minton and Glenfield Common;

3. A left patrol, of a sergeant, a corporal, and 12 men, to cross the Tarbor by the Great Marlow Road and keep up the touch with the right patrol of the third squadron.

The remainder of the second squadron follows its advanced patrols by the Erley-Minton Road, disposed into a support and a reserve.

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, and is also printed in the margin of the six-inch Minor War Game map.



## MOVEMENTS OF THE CENTRE PATROL (RED).

The patrol under Sergeant D. arrives at Minton at 8 A.M., having first reconnoitred the town by advanced scouts and ascertained that it contains none of the enemy.

Inquiries made at the inns and post office, and of the local authorities, afford no clue to the whereabouts of the Blue patrols, but a hawker from Pawley states that that village was visited shortly after daybreak by some horse soldiers. He does not know whether they remained there or not.

On receipt of this information, the sergeant details a left scouting group, of three men under the corporal, to reconnoitre Pawley, advancing by Heath Hill and Drayton Hill. Should the village be occupied by Blue, signal is to be immediately made from Drayton Hill to Sergeant D.'s party at South End Bridge. If no signal is made, the patrol will proceed on to Drayton Farm, where the corporal is to report proceedings.

A right group of scouts, two men, is at the same time sent over Minton Bridge, to recross by Rushton Bridge and reconnoitre Ripley Heath and Woods, communicating if possible at Ripley Bridge with the right patrol of the squadron. Thence to Stanton Bridge, till signal is received from Yatton Hill that the left flank is safe. The scouts are then to advance as an independent group, and to examine the west bank of the East Tarbor River, also Windmill and Gorsham Hills, rejoining the patrol at Garrads Cross.

The detached groups having left Minton at 8.20 A.M., Sergeant D. with the remaining five men of the patrol advances over Heath Hill to South End Farm, which he examines. He then sends two flankers round by Stanton Bridge, to establish communication with the right group; they are to rejoin the patrol on Yatton Hill. Sergeant D. proceeds to South End Bridge with the other three men, waiting there a few minutes for signal from Drayton Hill. None being received, he advances up Drayton Bottom to Drayton Farm, which he searches with two of his men, while the other man rides up the road towards Yatton Wood to establish communication with the right flank. The farm is quite deserted, and all the barns present appearance of having been recently emptied.

The corporal now rides in from Pawley and reports it to be clear of the enemy, but that a foraging party of 30 dragoons (Blue) left the village about 8 A.M. for Glenfield, having

previously pressed several carts and requisitioned corn and other supplies with some violence.

The corporal is ordered to take his scouts over Totley Bridge, to reconnoitre Cleveley Park, and the extreme left flank as far as Chorley Farm and the high ground above it, rejoining the patrol at Garrads Cross.

Signal is also transmitted to the right flank by the scout on Yatton Hill, to the effect that the advance may be continued, and Sergeant D. proceeds to cross the river by Yatton Bridge. He previously details two flankers to cross by Winsley Bridge and reconnoitre the west of Rainham Wood. His former flankers rejoin him on Yatton Hill, after passing signal to the right group of scouts at Stanton Bridge.

After passing the bridge Sergeant D. detaches one of his men to ride rapidly round the east side of the wood, he himself following the other two up the centre road. In traversing the wood, the two men as well as the sergeant preserve distances of about 100 yards between each other, till the farther edge of the wood is reached.

On gaining the plateau the leading man crosses to the crest and reconnoitres Glenfield, keeping well out of sight of observers from the town. He perceives Blue cavalry, with carts, on the march, tailing out of the town in the direction of Garrads Cross.

The sergeant coming up, gives orders to all the men, as they join him, to keep well concealed behind the copses. He sends two of them to the extreme end of the spur to the east of the main road, with instructions to watch the Blue cavalry until they have crossed the stream. These men conceal themselves at the eastern edge of Birch Copse, whence they obtain a clear view of the common from Glenfield to Garrads Cross.

The scouts composing the right group, having carried out the instructions they received to reconnoitre the East River, and to communicate with the right patrol of the squadron upon the other bank, have ridden up to Gorsham Hill, and are about to descend to the common, when the leading man perceives Blue cavalry on its way to Garrads Cross Bridge. The scouts instantly conceal themselves behind one of the copses on the crest of the hill, in order to watch the enemy. Having observed him for a moment, one of the men is about to ride in to the patrol with the information, when he catches sight of some of the sergeant's party on Rainham Hill, and perceives that they are also observing the enemy from the plateau.

The scouts under the corporal do not come across any

trace of the enemy on the left flank. From the hill above Chorley Farm they perceive the Blue cavalry in the distance moving away over Garrads Bridge, but leave it to be watched by the scouts of the other flank. The party breathe and water their horses at Chorley Farm, before proceeding across the common to rejoin the patrol.

Sergeant D. and his party keep close, till the enemy is well on his road and has crossed Garrads Bridge. Glenfield is then cautiously entered and inquiries are made.

The enemy is afterwards followed stealthily by the Red patrol to Garrads Cross. He leaves Garrads Cross after a few minutes' delay, by the Northam Road. His horses are jaded and he is not looking out for an attack. He is, however, too strong to engage, and, keeping his party well together, does not afford any opportunity of a prisoner being secured to give information.

The Red patrol and both its flanking groups arrive at Garrads Cross about the same time. The sergeant now sends one of his men as an orderly to the rear with the following report:

|        |             |   |
|--------|-------------|---|
|        | From . . .  | <i>Sergeant D., commanding patrol.</i>  |
|        | Place . . . | <i>Garrads Cross.</i>                   |
| No. 1. | To . . .    | <i>Captain E., commanding squadron.</i> |
|        | At . . .    | <i>Minton or the Minton Road.</i>       |
|        | Despatched  | 9h. 20m. A.M. 20.7.77.                  |

*'No enemy now south of Glenfield Common. We have tracked foraging party (30 dragoons) from Pawley. They have left this by Northam Road at slow pace. Seven wagons of corn with them. We follow them up.*

*'D., Sergeant.'*

This report is delivered to Captain E. on the march with the reserve of the squadron, one mile south of Minton, at 9.32 A.M.

The movements, thus described, are shown in Plate XVIII.

#### OBSERVATIONS.

In this Exercise it will be remarked, that so long as it remains doubtful whether the enemy is or is not at Pawley, the touch is rigidly preserved from the left to right of the patrol, in order that, if Blue is present, information may immediately be transmitted to the patrols on the east bank of the East Tarbor River. As soon as it is known that the enemy has crossed to the north of the Tarbor, the detached groups on the flanks advance in independent reconnaissance. Should they not touch





on the enemy, they are to rendezvous at Garrads Cross. They would then either rejoin the patrol, or be again detached with fresh instructions.

The Exercise might with advantage be extended, by the student considering whether Captain E. could reasonably expect to overtake and capture the foraging party before it reaches Northam, should he desire to do so for the purpose of securing prisoners or of seizing the forage escorted by the Blue cavalry. If he immediately despatched a party to reinforce Sergeant D., the distance which it would have to pass over, and the point on the main Northam Road at which it would overtake the Red patrol, can easily be determined by aid of compasses and time-table. The reinforcing party would start from a point one mile south of Minton at 9.32 A.M. and proceed at about 8 miles an hour. The Red patrol following up Blue cavalry would have left Garrads Cross at 9.25 A.M., advancing at about  $\frac{1}{2}$  miles per hour; just sufficient pace to keep the convoy in sight.

At these relative speeds, points of departure, and hours of starting, the place where the reinforcement would catch up the patrol can easily be found; and it could then be seen whether, or not, the convoy would have too nearly reached its main body at Northam, to render an attack upon it prudent or advisable. The distance from Garrads Cross to Northam is about  $4\frac{3}{4}$  miles.

## CHAPTER IX.

## ATTACK AND DEFENCE OF INFANTRY.

## TACTICAL EMPLOYMENT OF INFANTRY IN ACTION.

It has already been shown that infantry must fight in dispersed order when opposed to the fire of modern artillery and small arms, which render old shoulder-to-shoulder formations obsolete in scientific warfare; the military student will therefore do well to inquire into the details of modern infantry combat, as soon as he has mastered its leading principles. He will thus be led to recognise the fact that precision and steadiness of execution, in the movements of this arm, are more than ever a necessity, on account of the dispersion and isolation of individuals in the extended line, and of the substitution of groups or company columns under many separate leaders, for the battalion or brigade columns formerly employed.

So far, in fact, from the new order of things allowing of looseness, as might at first be supposed, it must be conceded, that the steady work of the drill sergeant in preliminary training is now more than ever of value to the infantry soldier. His exercises in musketry which teach him to use his weapon with skill and to the best advantage are also indispensably necessary. But where the instruction afforded to the soldier by the drill ground and rifle range ends, his tactical education for infantry combat should commence.

To exercise the drilled soldier in all the minutest details of the probable phases of attack and defence is undoubtedly, with other tactical training, the duty of the company officer;

and this will sooner or later be acknowledged in our service as fully as it is in Continental armies.\*

Whoever may be entrusted with the individual instruction of the soldier, it cannot be too carefully carried out and completed, in order to accustom each man not only to act in group or company, but even alone and unsupported, when occasion demands it.

The general end of all fighting, so far as the infantry soldier is concerned, is either to drive the enemy from a position, in order to occupy it himself, or else to prevent the enemy from seizing a position which he, the soldier, already occupies.

An effective fire must be the earliest means employed by the assailant in the one case, or by the defender in the other, to attain his object; but this fire is sure to be returned by his adversary, so that the combat becomes a simple duel, unless one side, while keeping up its own fire with best possible effect, can also prevent that of the enemy from inflicting injury in return.

The first essential is fulfilled when the soldier uses his weapon at distances which give him the best chances of hitting his mark; the second when he knows how to reap advantage from cover, and how to save himself from the effects of hostile fire by adroit movement when in open ground.

These leading principles of the art of infantry combat should be laid well to heart by the student, and form the basis of all instruction given to the soldier.

Every man should be taught to utilise to the fullest extent all kinds of cover that may be available, either in his advance or when he takes up a position of rest or defence. He should be instructed in the best manner of firing from behind cover, whether standing, kneeling, or lying down, according to circumstances. It is also of the greatest im-

\* Since the first edition of this book appeared, many improvements have taken place in our system of military training. The captain has now a better chance of commanding his own company than he ever had before in our service.



portance that he should be practised constantly in quitting cover, both for advance and retreat.

If sheltering behind a thick tree, the soldier should fire from the right side of it, resting his left elbow against the trunk which covers his body. If the tree is slight and does not afford much protection, it must merely be used to steady the rifle. If he is firing from a window or through an opening or loophole of any kind, he should rest against the left side of it. When behind a bank or hasty parapet of earth, the rifle should be rested on the crest, the soldier standing, kneeling, or lying down behind it according to its height from the ground or trench. If firing from behind hedges, standing corn, or anything which only gives concealment from view, the soldier should if possible change his position immediately after discharging his rifle.

Should there be no cover the soldier may lie down to fire, placing himself flat on his belly with his elbows on the ground, the barrel of his rifle being steadied on a small mound of earth, two or three stones, or anything immediately available at the moment.

It is most desirable that ammunition should not be wasted during an engagement; it should therefore be impressed upon the men, before they are allowed to fire, that not a single round should be expended without a fair prospect of its being effective. The following general rules are recommended to control the fire of the individual soldier when acting independently, and to guide officers when ordering volleys to be given:—

| <i>Objective.</i>   | <i>Limit for aimed fire, at short and medium ranges.</i> |
|---|--|
| An enemy whose head only can be perceived . . . . .             | Up to 200 yards only.                                    |
| Men half hidden by cover . . . .                                | Up to 400 yards only.                                    |
| Skirmishers, or infantry scouts, advancing or retiring . . . .  | Up to 500 yards only.                                    |
| Extended infantry in the open, or single cavalry scouts . . . . | Up to 600 yards only.                                    |
| Groups, or troops in support . . .                              | Up to 700 yards only.                                    |
| Reserves, or a battery of artillery                             | Up to 800 yards only.                                    |

At long ranges volley firing will generally be employed ; it will be found effective by sections if well directed.

| <i>Objective.</i>   | <i>Limit for unaimed fire at long ranges.</i> |
|---|---|
| A section of infantry, in close formation . . . . .                               | Up to 1,000 yards only.                       |
| A half company of infantry, or a section (2 guns) of artillery                    | Up to 1,200 yards only.                       |
| Battalion or company columns, or compact bodies of artillery or cavalry . . . . . | Up to 1,700 yards only.                       |

The men should also be taught that the most common error in action is to fire too high. If the aim is too low the bullets may yet strike by ricochet, and at any rate make the enemy hesitate to come nearer, but if fired overhead they have rather a tendency to encourage the enemy and to cause him to quicken his advance.

The general conditions under which the soldier has to act in infantry combat, either alone, or in company with others, may be considered under three heads :

1. When approaching to attack an enemy who is more or less under cover.
2. When approaching to attack an enemy who advances to the encounter.
3. When awaiting behind cover the expected attack of an advancing enemy.

#### THE INFANTRY SOLDIER IN ATTACK AND DEFENCE, ALONE OR IN DETACHED GROUPS.

A soldier acting alone, when advancing against an enemy posted more or less under cover, should move rapidly from one shelter or obstacle to another ; without bending down or assuming a creeping attitude at the longer distances. The upright position at long ranges is practically as safe as the stooping posture, and better enables a man to keep his eye on the enemy, and also to select the best cover for himself as he advances. The rifle is carried at the trail, in the

manner most convenient to the soldier. As he comes within medium ranges he opens fire, but always at the halt and from behind cover if any is to be had, slowly and deliberately at first, but more rapidly as he closes upon the enemy's position.

At the longer of the medium ranges, that is from 800 to 500 yards, where the danger of being hit is not very great for a single man, he may allow himself to be clearly seen when crossing open spaces, for he can thus advance more rapidly and with fewer halts, which are no advantage to him till he begins to fire.

In crossing the space which lies between 500 and 300 yards from the position cover becomes of great importance. The soldier should rush from one point of shelter to another at full speed, and if the ground is bare he must occasionally throw himself flat down, to take breath, and also to fire.

When he is nearer than 300 yards to the enemy he must select points of shelter close to one another, and either dash on from one to the other with a spurt, or creep or crawl up, according to circumstances. If there is plenty of cover the latter is the best method. The closer the soldier is to the enemy the more must he endeavour to group with his comrades behind each sheltered resting place, and the longer he should remain at each point, for the purpose of bringing a rapid and continuous fire to bear on his adversary, in preparation for the final rush which carries all before it.

A soldier detached to scout in front of a group, moving upon an enemy whose position is not quite known, should not at once double out to a fixed distance and post himself in observation. He should rather work gradually up to the front with due precaution, taking every advantage of the ground to conceal himself, and looking here, there, and everywhere, not only to try and get a sight of the enemy, but also to select good cover for the group to move up to, while he himself again advances to reconnoitre. The signals already mentioned for infantry can here be well applied by the scout, and 'the enemy in sight,' at once notified to the group in

rear. The commander of the party can also make signals by sounds to the scout either to attract his attention or to direct him at once to halt or advance. The whistle is well suited for this purpose.

The advance of a small group, say for example four men, against an adversary in position, with the positive intention of attacking him, should be executed without that dispersion which is allowable in the case of a patrol of the same strength, approaching an enemy with a view to reconnaissance. The group should be extended for attack by files, with intervals of some four paces between the files, and should advance from point to point, taking every advantage of cover until within firing distance. The rear rank men then come up into line with their front rank men, and the group advances in extended order as a fighting line, following the general rules laid down in the foregoing paragraphs.

Should the group be of a greater strength than four men, some of the party may follow in support until the group nears the enemy, when, taking advantage of a halt behind cover, they double up and reinforce the fighting line. If a scout is out in front, he should wait under cover on arriving near enough to the position to reconnoitre, and should join the fighting line in the final advance.

A soldier acting alone, whether separated from his comrades, or for other reason, and desiring to attack an enemy who advances to meet him, should endeavour to practise, as far as possible, similar principles of detail. He should seize the opportunity of firing from behind his own cover when his adversary shows himself in the act of advancing, and he should make his rush forward to the next cover at the instant that he sees the enemy about to halt, and in the act of looking out for shelter.

A group of men meeting under like conditions a group of equal strength, can only expect to obtain an advantage, by the exercise of better tactics in the advance, or by more skilful shooting. But if one of the groups has a support in rear, which, at the critical moment, brings it reinforcement, a victory will probably be thus secured to the stronger party.

The weaker side may perhaps take advantage of a momentary halt under shelter to retire before the stronger group, the latter becoming aware of the movement by a cessation or reduction of fire on the part of its adversary. But should the weaker group take post with a view of making a stand, the stronger party would probably attack it. Having worked up as close to the enemy as circumstances will allow, the assailants would deliver a final volley and then advance to the assault with bayonets fixed. When within 30 or 40 yards they would quicken their pace to the charge if the defenders have not already given way. The stronger party might also employ a portion of their support in making a flank attack, to combine with their direct advance upon the enemy.

A soldier posted behind cover to await the attack of an approaching enemy, should not open fire until his adversary comes well within effective range. He should take advantage of the latter becoming necessarily exposed in advancing from one point of shelter to another, in order to fire at him with best chance of success. But a soldier behind cover cannot reap the full advantage of his position, unless he carefully follows all the movements of his approaching enemy, never if possible losing sight of him. He must therefore clearly understand that, although he may conceal and protect himself by accidents of ground, the cover so obtained is only to be used as a means to an end, to enable him by its assistance the better to fight and overcome his adversary. This object cannot be attained by mere avoidance of the enemy's fire, and the soldier will never gain a victory by simply lying behind an obstacle. A habit of clinging to safe places would be worse for an army than any extent of rashness at all likely to be shown. Hence the soldier should be carefully instructed not only in the practice of using cover, but also of readily issuing from it at the proper moment. The most secure shelter must be changed without hesitation, to right, left, front, or rear, or abandoned altogether, in order to obtain some new advantage of position, or to follow the enemy's motions as he seeks to gain new shelter.

A man in position towards whom an enemy is advancing,

must not omit to alter the sight of his rifle as the range becomes shortened. The fixed sight, however, does for any range not exceeding 500 yards.

Should the enemy retire, the chances of hitting him while in retreat are now much greater, for whether or not he maintains a running fight in falling back, he cannot help exposing himself more than in the advance, and he has moreover greater difficulty in selecting his points of shelter, and is necessarily slower in taking post behind them.

As the infantry soldier in position may not only be called upon to act against his own arm, but also against cavalry or artillery, a few remarks with reference to the two latter conditions may be added to the above. In firing at single cavalry scouts, or at mounted officers, the soldier should endeavour, if they are at any distance, to aim at them when a side view of the horse is obtained. If they are close the horses should be aimed at when in motion, and the riders when at the halt or when in the act of turning their horses. Aim should always be taken at the horses of guns when artillery is in motion. When unlimbered, the men of the gun detachments should be fired at. When at long range, the moment of unlimbering or limbering up should be watched for, as then the men and horses all close to one another present a target of considerable dimensions.

A group of men behind cover must act in concert, and be guided by similar principles to the above. When the advancing enemy receives reinforcement into his fighting line, the defenders should increase the rapidity of their fire to the utmost, without allowing it to be less accurate, in order to counterbalance the enemy's accession of strength for attack, by a corresponding increase of fire-action on the part of the defence.

In addition to these details, the student should also note the manner in which an individual soldier or a group would maintain a running fight in retreat. Whether the retreat be forced or voluntary, it should always be conducted in good order. The soldier should fall back at a rapid pace from one point to another, turning to fire when under shelter, and then

make further rushes to the rear in succession, until beyond range.

If three or four men are falling back together, two should first retire, a little scattered, and turn to fire from behind cover, while the others pass between them at a run to more distant shelter, whence they in their turn can open fire to distract the enemy's attention, and to protect the retreat still farther to the rear of their comrades. If cover does not exist, similar tactics should be followed by the men throwing themselves on the ground to rest, and maintaining the running fight by firing upon the enemy at each halt.

If attacked by cavalry in the open, an infantry soldier should not shrink from the encounter, unless the numbers against him are overpowering, in which case, if suddenly overtaken, his best chance of escaping injury is to throw himself flat on the ground, his worst chance to run away. It should be impressed upon the men, that a single infantry soldier on broken ground, provided he remains calm and collected, has the advantage over a mounted man. The smallest group, back to back, can face cavalry with security, so long as they are cool and fire at the proper moment. If the soldier is attacked by a swordsman, he should try and keep on the left side of the mounted man. A blow on the side of a horse's head often renders it unmanageable, but if the soldier endeavours to bayonet his adversary's horse he should stab it in the flank, never in the chest.

The method of conducting the attack, defence, or retreat, of a larger group, say, for example, one consisting of ten or twelve men, may now be considered. In the attack a portion of the party would be retained in support, a convenient distance in rear. The support, extended by files at two or three paces interval, for the early movements, would join the fighting \* line at the critical moment of the advance, or be

\* In the new attack formation the initiative in the assault no longer is taken by the front line, which is now called the 'firing' line. In the attack by very small bodies things must remain as they were, for the front line must both fire and assault; therefore the old designation 'fighting' line is still appropriate.

employed to turn the enemy's flank. Should the attacking party have to retire before the reinforcement of the fighting line has taken place, the support would cover the retreat of the latter by extending to rank entire, lying down under cover, and opening fire on the enemy, as soon as the front is cleared by the fighting line having passed to the rear. The fighting line would then take up a sheltered position to cover the retreat of the support.

In the defence, a party of ten or twelve men would keep its whole strength in the front line ; but position should if possible be taken up in such manner, that two or three men would be under cover in a group together, at an interval of some ten yards or so from the next group. By this means the flanking groups would be able to distract the assailants, to a certain extent, by a cross fire. The disposition must, however, in all cases be so much influenced by the ground that no precise course of action can be dictated.

#### GROUPING OF INFANTRY SOLDIERS.

In the foregoing pages much mention has been made of groups and of their leaders. The principle of working by groups, under various conditions of service, is clearly sanctioned by our Regulations, and too much stress cannot be laid upon its tactical importance. In well-trained infantry, an effective system of grouping cannot but tend to a good end. Not only should the comrades of a file act together in group in the extended line, but larger groups, subdivisions of the section, should be formed under leaders by the company officers. In addition to this, whenever during an action any men get separated from their own leaders, they should be taught to form in groups under the nearest non-commissioned officer or the oldest soldier, and even if two privates are alone together, one should take command. In the fighting line, small compact bodies here and there, according as cover enables them to collect, are of great value, forming good rallying points and adding solidity to the line. The men thus grouped should be under leadership, and fire volleys occasionally by word of command.



Not only will this system be advantageous in pure attack and defence, but it will insensibly conduce to the training of the group leaders, now so much needed for the various minor operations of war.\*

#### FIRE DISCIPLINE.

Before passing on to the operations of larger bodies of infantry in attack or defence, a few remarks may be made on the subject of the strict discipline necessary for controlling and regulating the fire of men in action.† It is clearly admitted that in all infantry combat an efficient fire is the only sure preparation for success. The employment of this fire must therefore be so regulated from the beginning, in accordance with the progress of the engagement, that it may gradually augment in power up to the final stage, when it should attain the fullest necessary development.

As the soldier, from the moment firing commences, must necessarily be left to himself, so far as the management of his rifle is concerned, it becomes of paramount importance to inculcate principles of strict discipline in the firing line, with a view to counteract the tendency to too much independence of action, which the dispersed order of the men might otherwise encourage. The habits of method and steadiness required can only be looked for in time of war by being steadily practised in time of peace.

\* Readers interested in this question are referred to Von Arnim's *Extracts from an Infantry Captain's Journal* for many incidental details connected with the use of groups in the minor operations of modern war. These show clearly the advantages to be derived from thus training as sub-leaders all the non-commissioned officers, and a proportion of the rank and file. In Von Helvig's *Tactical Examples*, also, the frequent use of groups in infantry combat, more especially when combined with extended order in the fighting line, is constantly advocated. Von Helvig gives many interesting examples.

† Great attention is paid to this in the German and Austrian armies, and the French have also seen the necessity of instructing their men in these habits of discipline. The recent text-books of these services, which have been carefully consulted, give many valuable hints thereon.

Three golden rules for the soldier should be :

1. *Not to fire at all unless the order to commence firing has been given by his commander ;*
2. *Never to fire when in motion ;*
3. *To cease firing immediately when ordered by his commander.*

As regards the first rule, it should be explained to the men, that the order to commence fire is merely permissive, and does not mean that every man is to fire, whether he sees the enemy or not, but that the enemy should be fired at by those men selected to fire, whenever he exposes himself sufficiently, and if he is within proper range. The order to fire would be given to the men of a small group by the commander of the group, to the men of a section or company by the section or company officer. When acting in larger bodies it would often be given by the bugle sound. If a soldier is acting alone he must of course use his own judgment as to when he should commence to fire.

The second rule requires no explanation or qualification ; it should be absolute under all circumstances.\*

As regards the third rule, it is often of the highest tactical importance that the men should immediately cease firing on the order to that effect being given. Strict discipline on this point should therefore be inculcated.

The commander of a group or party should direct his special attention to the fire of his men, rather than to his own fire if he is armed with a rifle. He should make the group

\* Since this was written, in proof of the adage that there never yet was a rule without some exception, an eye-witness has related to the author the following instance which occurred at Lucknow. A party of twenty men, attacking sixty or more of the rebels with the bayonet, fired upon them from the hip while in the act of charging, at ten yards' distance, thereby considerably reducing the numbers of the enemy before closing.

The German *Field Exercise* of 1889 presumes the possibility of special conditions, under which firing on the move might be resorted to, and instances a fighting line retiring before an enemy, and endeavouring while falling back to check the enemy's fire, which would otherwise be overwhelming. Such exceptions do not disturb the rule.

concentrate their fire on one point at a time, in preference to directing it indiscriminately over a wider area. He should cause the men not only to aim at such of the enemy as may be facing them, but also at those more on one side or the other, as oblique fire may often be directed, with great success, at an enemy placed behind cover which only conceals his immediate front.

The commander should take especial care that ammunition is not wasted in the early advance, so that at the decisive moment, when a heavy fire is required as a preparation for the assault, there may be no deficiency of cartridges.

When *independent slow fire* is employed, it must be carefully directed by the commander. Those men who are not skilled shots should be looked after when firing, and made to aim low. They should be ordered to fire at the largest groups or masses, while the better shots are directed to pick off officers and advanced marksmen. To secure steadiness during the slow fire, it is a good plan for the commander of a group constantly to indicate the object to be fired at by named men, or by the whole party, with the number of rounds, thus, 'So and so, fire three rounds at the men near the white posts;' or, 'Every man fire two rounds at the gap in the hedge.' In all such firing the men must adjust their sights and then take careful aim at the object.

Under recent regulations slow independent fire is virtually reserved for skirmishers. It is not recommended to be employed by the firing line in the attack, an exception being made for marksmen if ordered to pick off the enemy's scouts. A force of skirmishers may, however, be employed to clear the way for an advancing force, or even a few selected shots as skirmishers may precede the firing line itself in the attack. Under these or similar conditions slow fire will always be used.

*Volley firing* is recommended to be maintained, at suitable ranges, from the commencement of the attack and during its development, until the final stage is reached.

*Rapid independent fire* is reserved for the final stage of the attack.

It is, however, clearly laid down that the control of fire

rests with the captains of companies ; that they are on all occasions to determine its nature and its direction ; and, in view of the contingencies which arise in action being necessarily variable, that fixed rules cannot always be enforced, and much freedom of action is therefore left to commanders.

Volley firing is always executed by word of command. In the case of small bodies of troops volleys may be fired by groups ; in the case of greater force being engaged by sections, half-companies, or companies.

In the attack, volley firing will but rarely be commenced at extreme distances, *i.e.* within the 1st zone, artillery being the principal arm at this stage. In the absence, however, of artillery, the fire of infantry, and that of machine guns if available, must prepare the way for attack by opening upon the enemy at extreme ranges.

In the 2nd zone if favourable opportunities present themselves for long-range fire against advanced troops of the enemy, or even against those of his main position, half-company volleys may in such case be fired by the reserves of the First Line. This is, however, necessarily unaimed fire, and too much ammunition should not be expended thereon, nor can much result be expected therefrom under ordinary conditions.

In the 3rd zone, the firing line having reached effective ranges, may think fit to commence to fire. If the position is crowded with defenders not well covered effective volleys may be given at about 600 yards, the men firing being in single rank so that all can kneel or lie down. As a rule the volleys now given will be by sections, but after reinforcement by a support half-company volleys may be fired.

Rapid independent fire will be deferred as long as possible in the attack, to ensure the fire being kept well under control, and to avoid ammunition being wasted. When the firing line has been reinforced and the moment of assault approaches, the order is given for rapid fire. This takes place always at short range, say about 150 yards from the position, and only lasts for a few minutes, during which the hottest possible fire is kept up. Here the soldier, using his fixed sight, takes such aim only as will ensure his bullet being

directed straight to his front, and rather low than high. Rapidity of fire is the object to be attained, and 6 to 9 shots a minute should be given by each man, when the rifle is used as a single loader. This is also the proper moment for using the magazine attachment when such is available, as it is the critical instant when the fight must be pressed to a successful issue, or defeat be else incurred.

In the defence volleys can be given at long distances with greater advantage than in the attack, as the ranges can be better estimated, and rests adapted for the rifle, the distribution of ammunition is easier, and fire discipline can be better maintained than is possible with men who are constantly on the move.

While the assailants are passing through the 1st zone, volleys may be fired by the advanced posts. In the 2nd zone, half-company and section volleys may be given by the firing line of the main position, which has been hitherto kept under cover. As medium ranges are reached by the enemy, carefully aimed volleys will be delivered by sections, directed upon the assailants' supports and reserves as well as upon their firing line.

Rapid independent fire is commenced by the defence at the momentous period immediately preceding the assault, when the attacking line, having been reinforced to the fullest extent, presents a good target for the defenders' bullets at short range. Now is the time for magazine fire, every effort being made to ward off if possible the threatened danger of a successful assault.

In estimating the value of the volley, which obtains so much favour in the British service, it may be said that its smoke disappears rapidly, and only marks for an instant the position of the riflemen, whilst the smoke from a line of men firing independently hangs about them, and not only continuously betrays their position, but soon impedes to a great extent their view of the enemy.\*

\* When the smokeless powder which is about to be introduced comes into general use, this comparison will no longer hold good, at all events not to the same extent.

A curved cone of fire is formed by the bullets fired in a volley as they pass through the air. The curve or angle of descent of the cone is increased in proportion to the range : the section of the cone is at the same time enlarged, and consequently the fire becomes less dense as the range is increased. When bullets are fired with the same elevation and directed on the same object, the ground over which they skim before graze, at a height less than that of the object to be struck, is called the *dangerous or beaten zone* ; its depth decreases and its frontage or width increases, as the range becomes greater.

In delivering volleys at troops in different positions, these facts should be borne in mind. When firing against troops in deep formations, a dispersed or large cone (formed by using varied elevations) would be most effective. Against compact bodies of troops, or artillery in action, or cavalry attacking, a close or smaller cone would be best.

Volley firing owes its effect to a mass of projectiles pouring in upon the enemy at the same instant, and it has this advantage, that the rapidity of fire and the consumption of ammunition are more easily regulated by the commander ; consequently the direction of the fire and of the men themselves may be said to rest with one and the same person.

Independent fire owes its effect upon the enemy to a continuous rain of projectiles, accompanied by their demoralizing whirr and whistle. This fire for the time causes more loss to the enemy, although the expenditure of ammunition is out of all proportion greater, and it is often difficult for a commander to make his men cease fire when necessary, and to keep them as completely in hand as they ought to be kept during this fire. For the last stage of either attack or defence it is well suited, as the action must then be of a finally decisive character, and is necessarily of short duration.

## THE COMPANY OF INFANTRY IN ATTACK.

The company or fighting unit of infantry, of which the complete war establishment is given at page 16, will consist of upwards of a hundred men, divided into two half-companies, and four sections.

The company is of sufficient strength to act independently under many conditions of service in the field, but our lately revised regulations for the attack and defence of infantry do not provide for the possibility of such contingencies. The company is always treated in the manual of infantry drill as being part of the First Line, and never as acting entirely unaided. This is hardly sufficient for the military student; we will therefore in the next few pages first trace the progress of the company in attack, as a portion of the First Line of a larger force, and then endeavour to show what its action would be if it enters alone into an offensive combat.

A force of infantry intended for *attack* is divided, when of sufficient strength, into First, Second, and Third Lines. The First Line subdivided into firing line, supports, and reserves, is to engage the enemy and break down his resistance by fire action, under cover of which it advances to charging distance. Thence it delivers such a heavy rapid fire as to enable the Second Line to close up immediately behind it, in readiness to pass through the firing line and assault the position. This the Second Line does, as soon as its way is sufficiently prepared, by the losses which the fire of the First Line inflicts upon the enemy. As the Second Line advances to the assault through the First Line, the latter ceases firing and joins in the attack. The Third Line backs up the two front lines, and is intended to confirm a success, or in case of a reverse to enable the leading troops to retire.

When a company is acting as a portion of the First Line of attack, its normal procedure would be as follows.

The captain would point out to the company the position which it is intended to assail, and some prominent object in a direct line with it must be noted, so that the men may clearly mark their line of advance. A non-commissioned officer is

detailed to be responsible for the correct marching of the file of direction, i.e. the centre file of the company. We will take it that the company has been named as the directing company of the battalion, which makes this duty one of great importance.

The position to be attacked is about 2,000 yards off, the company therefore stands within the limits of the 1st zone. On the command being given to the force to which it belongs to form for attack, the company is divided into a firing line and supports. Nos. 2 and 3 sections advance to form the firing line under the junior lieutenant, the two flank sections following at 200 yards' distance as supports under the senior lieutenant. As these last sections advance they maintain, as far as possible, positions in rear of the outer flanks of their firing line. Both lines move at this preparatory stage in whatever formations local circumstances may direct.

On entering the 2nd zone, which it may be remembered commences at 1,700 yards from the position, both the leading and supporting sections continue to advance in line with intervals of one pace between files. When about 900 yards from the position, the lieutenant in charge of the firing line will order it to open out to three paces between files.

When the 3rd zone, commencing at 800 yards from the position, is entered, the firing line has reached effective ranges and firing is permitted. The captain must decide when it is to commence and to what extent it is to be employed. This will depend on the nature of the defender's position, and on the target which he offers to the assailants' fire.

At this stage of the attack fire will be nearly always delivered by volleys. The section commanders in the front line will receive instructions to fire volleys by alternate sections, or both sections to fire one or more volleys at each halt; they will give the required commands, upon which the men of the firing line form rank entire and proceed as directed. In each case of ordering a section to



fire, its commander will first point out the precise object at which aim is to be taken, and give out the range, so that the men can adjust their sights thereto. During the short halts occasioned by the firing of the leading sections, the supporting sections close up to 150 yards from the firing line.

The sections in the firing line work together as far as possible, halting at the same time, and advancing again together, after the fire of the section has been delivered, until a distance of about 500 yards from the enemy is reached. From this point, as further progress becomes more difficult, the firing line will continue the advance by alternate sections.

Thus the line may make a momentary halt under any available cover, No. 3 section delivers a volley, and No. 2 section rushes to the front to the next suitable spot. If no cover is to be had the section is halted when it has gained 40 yards in advance, and the men throw themselves flat on the ground. They then fire a volley, upon which No. 3 section will rush forward and lie down in the same alignment. In this manner the advance will continue, No. 2 section leading, the centre file of the company directing, and the rest conforming thereto.

In uniting the support with the firing line the captain must use his judgment, remembering that under ordinary conditions it is better to delay the reinforcement until within such telling distance of the enemy, that a sudden increase to the fire action of the assailants will have a decisive effect. On the order to reinforce being given one or both sections in support will form rank entire, and move up rapidly on the flank or flanks of the firing line. When both sections have reinforced, the lieutenants will each command his own half-company in the firing line.

The company will now continue to advance by alternate half-company rushes, volleys being delivered, either by half-companies or by sections, until some favourable ground about 150 yards from the position is reached, whence rapid fire preparatory to the assault can be opened upon the enemy.

During the advance to this position the frequent halts in front have enabled the company acting as local reserve at this part of the First Line, to work up to the leading company, and to reinforce it in part. The original firing line company still continues under its own commander, but from this time loses some of its individuality in the combined action required of it.

The caution for rapid fire is next given, and half-company leaders order independent firing with fixed sights to commence. Upon this the rest of the reserve company runs up at the double, and finding a gap on the flank of the firing line, inserts itself therein.

The heaviest possible fire is kept up for a short space of time, under cover of which the Second Line (which is now within 400 yards of the firing line) approaches at a steady double, having bayonets fixed. As the Second Line reaches the First Line, the captains of the latter blow their whistles loudly, as a signal to cease fire and fix bayonets. All officers draw swords and run to the front, the Second Line passes through the First Line, which latter immediately joins the Second Line.

The commanding officer then gives the order to charge, upon which the position is vigorously assaulted, with loud cheers and beating of drums.

If the attack is successful, the Third Line, which has followed in the most convenient formations, will now advance rapidly and occupy the position. The Third Line fires volleys on the retreating enemy, and under favour of its steady countenance the troops of the First and Second Lines will be reformed.

#### THE COMPANY ACTING ALONE IN ATTACK.

We must next follow the movements of a company acting independently in the *attack* of a small position or locality; say that a strong patrol, consisting of a company of 100 men, is sent to dislodge an enemy from a look-out post, established a mile off on rising ground, the country being undulating

and partly wooded. The company having advanced far enough to enable the position to be reconnoitred, a line of attack is selected which will enable one flank (say the right) to be protected by the ground during the advance.

The company is then formed up as follows :

- |                                  |               |
|----------------------------------|---------------|
| No. 1 section, as a firing line. | } First Line. |
| No. 2 section, as a support.     |               |
| No. 3 section, as a reserve.     |               |
| No. 4 section, as a Second Line. |               |

As regards the 3rd and 4th sections the captain points out to the company, in explaining the nature of the duty they are about to undertake, that circumstances may require *both* to act jointly as a reserve, should the firing line be unable to make way without such help, or that *both* may be enabled to be held back as a Second or assaulting Line, should the fire of the leading half-company be sufficient in itself to subdue the fire of the defence.

The section detailed as a firing line would be under the immediate command of the senior sergeant or right guide. The general command of the firing line and support would be given to the senior lieutenant. The 3rd and 4th sections should be placed under the command of the junior lieutenant, but the 4th section can, if necessary, be detached under the immediate charge of the left guide, who is the second senior sergeant.

The company commander or captain preserves a general direction over the whole of the movements, which should be regulated by the orders he has previously communicated to his subordinates, or by any subsequent orders transmitted during the progress of the engagement. The captain must, however, remember that once the leading sections are committed to action, fresh instructions are not only difficult to issue, but very liable to be misunderstood, or only carried out in part ; nothing is more likely to confuse and demoralize junior officers leading troops, and the troops themselves, than a constant interference in details by the commander of the force. Considerable freedom of action should there-

fore be allowed to the leaders of the advanced line, care being taken that they thoroughly understand the object which the commander has in view, before engaging in its execution.

The duty of the firing line from the moment it arrives within effective range of the position, will be to maintain a constant fire (as a rule by volleys) upon the defenders. As the attack develops, and the enemy is neared, the support must reinforce the firing line, in order to keep up a strong fire and prevent it slackening.

The support will in the first instance follow the firing line in echelon, on the left or exposed flank, and must be prepared to resist a flank attack upon the firing line as it advances, and generally to give strength and confidence to the leading extending section. At the early stages column formations may be employed by the support, and its distance from the firing line would be about 200 yards.

While beyond effective range the firing line will advance in extended order by files, at from one to three paces interval, according to the extent of ground to be covered ; on firing being ordered to commence, the rear rank moves up so as to form rank entire.

The firing line would thus assume the form of a pliable chain, sometimes stretched tight, sometimes relaxed and conforming to the curves of the ground, but always connected. The density of the chain, however, would not necessarily be the same at all parts, for should there be cover at one portion and none at another, the files would be closer together, sometimes in groups, where shelter was available, and at greater intervals than usual in crossing the open spaces. The commander of the firing line should take care that his men are brought up, with the least possible loss, to within effective range of the enemy, but as the position is neared he should also guard against any gaps being left in his line by too much seeking for cover.

The firing line may be preceded by a few scouts, skilled shots under a corporal, to observe and telegraph back by signs, the position and movements of the enemy, to drive

back his scouts, if he has any out, and to endeavour to pick off his leaders if they expose themselves.

It would depend upon what is known of the proximity, strength, and position of the enemy, whether the whole or only a portion of the section told off for a firing line should be at once extended in the advance. If any doubt should exist on these points, it would be better at first to throw forward a small portion only of the leading section, in very extended order. This thin chain would draw the enemy's fire as surely as a dense one, and it would be time enough to reinforce it to any required strength as the numbers and position of the enemy become revealed. The portion of the leading section not extended might follow a little in rear, marching by files or by groups as dictated by the ground, but always well in hand and ready to reinforce the extended line at a moment's notice.

As the support comes within effective range, or within about 800 yards of the position, its commander should cause it to extend into open order by files, or break it up into groups, unless the ground affords shelter from the enemy's fire, when a further advance may be continued in column formation. The distance of the support from the firing line must be steadily decreased from this point, as the latter approaches the enemy.

The post of the senior lieutenant in command of the leading sections will be somewhat in advance of the support, where he can best see to order up reinforcements to the firing line as may be required. In strengthening the front, he should take care that no more rifles are brought into it than can be used with effect, and as a general consideration he should bear in mind, that the nearer the firing line can advance to the point of attack without reinforcement, the greater the effect of such reinforcement when actually given. In bringing up men from the support, he will move them in groups in rank entire, and form them on the flank of the firing line. Advantage should be taken of the cover occasionally afforded by undulations in the ground, for reinforcing the front line.

The half-company divided into local reserve and Second Line, will follow the support at about 300 yards' distance, marching in column of sections.

The company commander, during the preliminary advance, will assume such position as may be most convenient; he will probably be found between the support and the reserve of the First Line. Before the final stage is reached, he will have determined upon his course of action, both as to making a frontal attack and as to the disposal of the two rear sections of his company. If these are both wanted to reinforce the front line as a reserve, they will form into line with open files and close upon the support as they near the enemy. In this case the whole company will be united in the firing line for the rapid fire, which, as a prelude to the assault, is delivered at about 150 yards from the position. As there is no Second Line to lead the way, the First Line must attack the position with the bayonet, when sufficient effect has been produced by its rapid fire. At the propitious moment the captain blows his whistle as a signal to cease fire and fix bayonets, upon which the officers draw swords and run out to the front. The company will then advance, and receiving the word to charge from the captain, assaults the enemy's position with loud cheers.

If, on the other hand, the commander is able to hold back one or two sections as a Second Line, the fire of the First Line is not so strong, but the moral effect is obtained of a fresh body of men leading the way to the assault. In this case, on the rapid fire being concluded, the Second Line passes through the First Line, which joins immediately in the attack; the actual assault being made, as in the former case, by the united strength of the company.

Should the post be taken, the commander must restrain his men from pursuit, and with the help of his officers reform the company as quickly as possible, contenting himself with harassing the retreating enemy by one or two parting volleys.

Having thus considered the mode of conducting a frontal attack upon a post or position, the student should endeavour to apply the principles thus learnt, to the variations neces-

sary when flank and frontal attacks are used in combination. This is the more requisite as it is now the generally accepted opinion, that pure frontal attacks cannot be made by infantry upon infantry in position with any hope of success, unless the numbers of the assailants much exceed those of the defenders ; in the latter case also, under ordinary circumstances, a combined attack by flank and front will usually be better tactics.

When anything like equality of forces exists, a commander should endeavour to attack the flanks of his adversary, even though only by the smallest possible detachments. Not only should the original scheme for attack involve a portion of the support or reserve prolonging the line at a fixed time with a view to a flank attack, if the ground and position of the enemy favour such a movement, but, during the progress of the engagement, no opportunity should be lost by section leaders of taking the enemy's line or part of it in flank, by small groups of men judiciously disposed.

At the final stage, too, even when the reserve has been brought up close to the support, but is not yet committed to the fight, the company commander may see that a frontal attack would be unsuccessful, and that a prolongation to a flank may be made, under cover of the ground, by part or the whole of the force in hand, by which means the enemy may be successfully taken in flank, at the moment when his whole attention is absorbed by the rapid fire of the firing line.

Not only must flank attacks be made wherever possible, but attacks made by the enemy on the flanks of the assailant must also be warded off. It is the special duty of the support, during the preliminary advance, to watch for these attacks, notice of which should be given by flanking scouts ; the reserve, and Second Line if there is one, must further take their share in resisting them, should the danger from this source be great, especially when both flanks are more or less dangerous.

## THE COMPANY IN RETREAT.

Should the commander at the commencement of the final stage see that a frontal attack must fail and that a flank attack is impossible, it will not yet be too late to retire, although such a movement can only be carried out with considerable loss. The rear sections, if acting as reserve, and not already launched into the firing line, will enable the latter to fall back under covering fire. The reserve itself, extended into single rank, may then retire by echelons of sections through the firing line, each section firing a volley before its retreat. The firing line, lying down or sheltered behind cover, must open a rapid fire as the reserve retires through its ranks. The commanders of sections should make every effort to retire in good order, and to take the whole of their men with them, at a rapid pace, a good distance to the rear, say fifty yards, at each retrograde move; checking any disposition on the part of the men to stop independently in rear of isolated points of shelter.

The great difficulty in retreats is to choose the exact and proper moment for retiring, for it should not be precipitated so long as a chance of success remains. On the other hand, should retreat be protracted too long, and the reserve be merged into the front line before the necessity for falling back is admitted, the retirement might easily become a rout, for a line retiring under fire without support at hand must almost inevitably fall into confusion. A writer of weight, Von Scherff, is of opinion that under such circumstances there is nothing for it but to let the men run, rallying them behind the most favourable points of shelter, if possible to a flank, and leaving the task of attacking to fresh troops if there are any; thus preserving for the moment a simply defensive position for those that have retired.\* A place suitable for assembly, in case of voluntary or forced retreat, might well

\* Also see Marshal Bugeaud, who recommended, even before the days of breech-loaders, '*s'exercer à fuir méthodiquement quoiqu'en désordre, et à se réformer avec promptitude,*' to meet such cases as the above.



be selected by the commander, and pointed out to his officers before commencing the attack.

The necessity for frequent practice, during peace, in the art of retreating, must be apparent to all, when we bear in mind that there is no manœuvre which Continental armies recognise as presenting more difficulty in time of war, and that English infantry have on more than one occasion appeared but indifferent performers when attempting to carry out this unpopular movement in presence of an enemy.

It will be seen by the foregoing notes, that the attack by a formed body of infantry, whose organization is complete, presents to the consideration of the student certain tactical phases. These are as follows :

1. Preparation for the attack.
2. Delivery of the attack.
3. Reformation on success, or,  
Retirement on repulse.

The *preparation* includes preliminary reconnaissance of the enemy and of the ground ; choosing the objectives, and concentrating artillery or long-range infantry fire upon them, to shake and demoralize the defenders ; so that the First Line may be thus enabled to cross the fire-swept zone.

The *delivery* includes the arrival of the infantry at effective ranges, their opening of fire, and their advance to the points from which the attack is to be made ; also rapid fire to subdue the enemy's resistance, and the delivery of the bayonet charge.

*Reformation* after success, and making good the position won, may be included in the next phase. Any troops kept out of the assault, resist counter-attack should one be made, and enable those who took part in the assault to reform. Volleys are fired on the retreating enemy.

*Retirement* under fire, if representing the last phase, is invariably accompanied by heavy attendant losses. The

fire-swept zone has to be crossed again by the defeated troops, and if no friendly cover enables them to rally, or if no fresh force is at hand to cover the retreat, it is apt to be turned into a rout, should the enemy press the pursuit.

#### THE COMPANY IN DEFENCE.

The distribution of a company of infantry, part of the First Line of defence, is much the same as in the attack, but its duties are necessarily different.

A force of infantry on the *defence* is disposed when of sufficient strength in three lines. The First Line, as in the attack, is composed of three parts, viz. : firing line, supports, and reserves. The firing line will occupy as much ground in the extreme front of the position as may be decided to be taken up. The supports and reserves will be concealed from the view and fire of the enemy, as much as possible, well under cover, and near enough at hand to feed the firing line as casualties occur, or to move to whatever part of it may require urgent aid.

The manner of posting the First Line depends largely on local conditions, such as the nature of the ground and the intended character of the resistance to be offered.

When the country is close and the position is one well suited for defence, such as the crest-line of a hill might be, with an easy line of retreat, supports and reserves may be nearer to the front and the First Line need not be so strong as would be necessary in open ground, with hasty earth cover alone available to shelter the defenders.

The Second and Third Lines are placed when possible in positions unseen by the enemy, and at first they should be centrally posted ; when the enemy's attack is developed they are moved as may be required ; either to resist the assault of the position, or to make a counter-attack on the enemy, or else to cover the retirement of the defenders.

When a company of infantry is ordered to form part of the First Line of defence, it would be distributed as follows : Nos. 2 and 3 sections to form the firing line under the junior lieutenant ; the two flank sections, Nos. 1

and 4, to be placed in the supporting line under the senior lieutenant.

The portion of the front line of defence to be held by the company being indicated to the captain, he decides the manner in which it must be occupied. At the most probable points of attack the men will be as close as possible, allowing free use of the rifle, while at other points, if the ground is difficult of access in front, they need not be so thickly posted.

The position for the supports will be so arranged that the men will be fairly safe from the enemy's fire while awaiting action, and yet close enough to the firing line to replace losses speedily therein, and thus to keep the latter to its maximum strength throughout the engagement.

The ground having been marked out for occupation in accordance with the above, the company will be kept back under cover during the early part of the defence. The captain should take this opportunity of ascertaining the ranges, as far as possible, to all marked objects in the line of advance ; both he and his section leaders making a careful note of the same.

When the enemy has entered the 2nd zone the order for the firing line to move into position is given, upon which the company takes post as has been already arranged. Long-range volleys by half-companies or sections may now be directed upon the enemy if a favourable opportunity offers. Should casualties occur in the two centre sections, under the enemy's fire, they will close on their centre, and the gaps on their flanks will be filled at once from the supporting sections.

At medium ranges, the points which are specially threatened by the enemy's advance, must be strengthened by full reinforcement from the supports, and, if necessary, from the local reserves. If the company is stationed at one of these points, the support will be moved up in full to the firing line, and the captain will take post in rear of its centre. Volleys will now be fired, not only at the enemy's skirmishing line, but at his supports and reserves as they come well into view. The

volleys aimed at the enemy's firing line are best given when each alternate portion of it makes its rush to the front, and becomes for the moment fully exposed.

At the last stage, if the enemy is not beaten back, the firing line is finally reinforced by the reserves, and independent fire will be employed.

As the enemy prepares to assault, the Second Line fixes bayonets and moves up to the rear of the firing line, to meet the assailants if they attempt to storm the position. The Third Line may possibly at this stage have moved out to a flank, in order to make a counter attack as the enemy assails the front of the position.

Should the assault fail, the troops remaining in position fire volleys on the retreating enemy.

If, on the other hand, the defenders are driven from the position, the First and Second Lines must endeavour to retreat under cover of the Third Line.

#### THE COMPANY ACTING ALONE IN DEFENCE.

A company ordered to take up a position of *defence*, for example to hold an advanced or isolated post, would move to its ground in the usual order of march, unless within reach of the enemy, when it would advance in fighting order preceded by scouts. On drawing near the position (about 150 yards from it), the leading section is halted, and the scouts are reinforced so as to enable a complete reconnaissance to be made, by which the commander can learn, not only if the ground itself is clear of the enemy, but if there is any appearance of his presence in the immediate vicinity. This examination proving satisfactory, the leading section may be marched up to the position, which it occupies from flank to flank, the men getting behind cover or lying down in temporary positions till the front line is finally fixed. The commander of the company having come up looks to the approaches, the flanks, and the best means of retreat, and then as quickly as possible decides upon the position for his firing line. It may be composed of the leading section, which is

accordingly posted in a general line, behind the most suitable cover from which the ground in front can be brought under fire. The men may be pretty close at the most likely points of attack, and farther apart where obstacles help to secure the front. A few well-advanced posts are occupied by groups, provided the ground is favourable, for the purpose of making the enemy develop his line of attack and general dispositions early in the affair. If no cover is to be had for the firing line, the men must lie down, and in such case it would probably be necessary to provide some artificial shelter, should it be intended to resist an attack of the position. The support should be placed in as sheltered a position as possible in rear of the firing line, and so close at hand that no difficulty may arise in reinforcing the latter, as required, during the engagement; it would consist of No. 2 section. The rest of the company should be held in hand, part to act as local reserve, and part as a Second Line, or both sections to be employed jointly in whatever way required. With this view the half-company composed of the 3rd and 4th sections should be placed in rear, centrally at first, but, as the enemy's attack is developed, it may be moved, either in whole, or in part, so as to be in the most favourable position, if mere passive resistance is intended, for quickly reinforcing the threatened part of the front line or for repelling a flank attack of the enemy, or else for the purpose of taking the offensive and delivering a counter-stroke upon the assailants at the proper moment.

The above is a general sketch of the normal dispositions which would be made by a small force holding a post or locality; so many variations, however, must occur under different conditions of ground, affecting not only the position of each portion of the force, but the proportion of men allotted to it, that rules can hardly be laid down for more definite guidance.

Two typical cases may, nevertheless, be considered.

*First case.*—The position taken up is along the crest of a hill with no natural cover beyond that afforded by the formation of the ground, which, though open, is undulating

and irregular. Here the smallest possible number of men that will suffice to hold it, should in the first instance be put into the firing line, which would be posted just behind the crest. The support should be unusually strong, and drawn up, in rear of the firing line, upon the summit, sufficiently far back to be well covered by the crest, and yet close enough to replace losses rapidly in the firing line, and also to reinforce it in full at the exact critical moment. This will probably be as the enemy commences to ascend the slopes immediately leading to the position, and comes within telling range. The remainder of the company would be held compactly in hand, to the rear, and well under cover, probably on the reverse slope, if there is one, of the hill. It should be ready, part of it to move as a reserve to any part of the First Line as the enemy's plan of attack is developed, and part, acting as a Second Line, to repel an assault either on the front or flanks, or to make a counter-attack as required.

The question of hasty entrenchment would probably come into consideration in such a case as the above, for the simplest form of shelter trench would give great additional strength to a position of this character. The trenches should be traced so as to bring direct fire to bear upon every part of the front, no provision being made for flanking fire. If the crest or ridge has re-entering angles, the trenches would not be continued into them farther than may be necessary to bring under fire adjacent ground, which would otherwise, from the nature of the slopes, escape the defenders' bullets. If a re-entrant presents too wide a gap to be left undefended, a trench might be made across its head. The men of the firing line being placed in the shelter trenches would now be no longer behind the crest, but rather at such a distance down the slope of the hill that they could see all the ground to their front.

The support would be drawn proportionately more forward, and might in such case even take the position just behind the crest, that would, without trenches, have been occupied by the firing line. Should the formation of the ground not afford sufficient cover, the support might also

be placed in trenches made upon the summit, with wide intervals between them, to allow of the firing line retiring, in case of a retreat being ordered before the assault takes place.

Entrenching the position would not only favour its passive defence but enable more men to be available for counter-attack, as the firing line could be held, under such conditions, with less force. As a general rule, the men of the firing line should not take part in the counter-attack by advancing directly from their position, even when they see the enemy broken and hesitating in the assault. Steady and continuous fire-action is their business in the defence, while the offensive is taken by the reserve of the First Line or by the Second Line, or else by the reserve and Second Line acting together, which in such a case as the present would amount to one-half of the whole strength. The counter-attack may be made either just before or immediately after the assault, whether the latter is successful or not. If delivered before the assault, the counter-attack would probably be made upon the enemy's flank in advance of the position. If delivered after an unsuccessful assault, it would also be made in a similar manner. In any case the 3rd and 4th sections would have been kept in readiness to move, either one or both of them, to the required flank of the defenders and attack therefrom. If delivered after an assault in which the enemy has pierced the line of defence, the counter-attack would be made by the Second Line kept back for the purpose, inside the line, and in rear of the position, when the enemy is in all the confusion attendant upon a successful attack. Should the main position be carried, the firing line will do well to hold its ground to the last and cross bayonets with the assailants, as any attempt to retreat under fire during the final stage must result in annihilation. Should the firing line engage at close quarters with the assailants, and the reserve sections be not all merged therein but a portion remain in hand, the scale may even now be turned by a counter-attack of the latter body; especially if directed on the enemy's flank. Unless, however, this movement is entirely successful and the assailants are

routed in their turn, the reserve sections will hardly do more than secure their own retreat, the fate of the firing line of defenders being almost to a certainty sealed.

Should the enemy be repulsed before the assault commences, by a counter-attack, or by the direct fire-action of the defence, a portion of the company may pursue to ensure a full victory, but great caution must be exercised in order to avoid falling into an ambuscade, or being suddenly met by the enemy's supporting troops. The men should be kept well in hand in pursuit, and volley firing will, wherever practicable, be found more efficacious than independent firing upon the fugitives, and moreover tend to steady the men by the necessary concentration of command.

*Second case.*—The position taken up not only affords command of ground, but also presents along its general line strong natural cover, such as banks, fences, walls, &c., with obstacles in front to the advance of an enemy from which he cannot moreover derive much benefit of shelter. Here, the firing line should be held from the commencement, by sufficient men to check the assailants in their advance and to meet a direct attack. The support should consist of sufficient men to feed the firing line, so far as casualties are concerned, and to keep it up to its full strength without assistance from a reserve. About one-half of the whole force will be sufficient for the firing line and its support. By this means the enemy will be held by a portion of the force acting as First Line, while the remainder, about half of the whole, will constitute a Second Line to be held in readiness behind the most exposed flank, either to resist a flank attack of the enemy and push the repulse home to him, or else to originate a flanking movement upon the assailant as he becomes hampered with the obstacles in his advance, should he be rash enough to attempt a frontal attack. It is to be observed, as we have already said, that the obstacles are not such as to give protection to the assailant; were they so, a flank attack upon him under such circumstances would not be attempted.

This mode of giving the counter-stroke would probably be



successful, having the advantage, common to all flank attacks in advance of the position, of not obliging the direct fire of the firing line to be interrupted, with fair security that the firing line, though weakened to the extreme limit, could hold its own against frontal attack during the operation, on account of the natural strength of the ground selected for the position.

The defenders may however, in this case, be taken by flank attack even though the front be strong, and the Second Line must then endeavour to cover the retreat. If fortunate, it may enable the First Line to fall back.

If, on the other hand, the counter-attack upon the assailant, in front of the position, has been successful, the company may, as in the former instance, follow it up in pursuit so far as prudence will allow.

#### THE BATTALION IN ATTACK.

The student can now apply the foregoing principles of detail to the attack of a battalion ; whether it be acting alone, or as a battalion in the First Line of a larger force.

The amount of frontage to be assumed should not be the same in each of these cases ; the method of calculation, as laid down in the revised infantry drill-book of 1889, making it dependent on the number of men in the First Line.

The frontage to be allotted to a battalion of infantry in attack formation, should not exceed that which the troops composing its First Line would cover were they deployed, together with company intervals of 6 paces between units in the firing line, and half-company intervals on the flanks of the line.

The battalion as a rule would move to the attack in half-battalion quarter columns, but it may also attack from column, quarter column, or line.

When in half-battalion quarter columns preparatory to assuming attack formation, it is convenient to allow an interval between the half battalions, equal to the front of one-company plus six paces. This allows of the two centre sections of the leading companies of half-battalions extend-

ing from their centres, with intervals between files of three paces, and covering half the front the battalion would occupy were it deployed into line, taking into account the usual intervals between units in the firing line.

When the battalion is acting alone half of it is detailed for the First Line, the remainder for the Second and Third Lines.

If the attacking force consists of a brigade or larger force the whole battalion may be employed in the First Line, each half-battalion furnishing its proportion of the firing line with supports and reserves.

#### THE BATTALION ACTING ALONE IN ATTACK.

Whenever available artillery will prepare the attack from extreme ranges, and afterwards help the infantry through the 2nd zone, so that the latter may possibly, especially when the ground affords good protection, arrive at the limits of the 3rd zone, or about 800 yards from the enemy, without extending. As, however, attack formations must be resorted to when any fire from the enemy's guns tells upon the infantry, it is better to assume that local conditions require the battalion to extend in the 1st zone.

The distribution of a battalion acting alone, and forming for attack from half-battalion quarter columns, would be as follows :

|             |   |   |   |   |
|-------------|---|---|---|---|
| First Line  | . | . | . | Nos. 1 and 5 companies,<br>firing line and supports ;<br>Nos. 2 and 6 companies,<br>reserves. |
| Second Line | . | . | . | Nos. 3 and 7 companies.   |
| Third Line  | . | . | . | Nos. 4 and 8 companies.   |

The frontage to be here taken up for a battalion of 800 men will be (in accordance with the rule) that of Nos. 1, 2, 5, and 6 companies if deployed, with the addition of one company interval of 6 paces between Nos. 1 and 5 companies, and also a half-company interval on each flank of the firing line, making another 6 paces, in all a frontage of  $(50 \times 4) + 6 + 6 = 212$  paces.

At 3,000 yards from the position the commanding officer having given his instructions tells off the battalion, which is in half-battalion quarter columns, for attack. All officers return swords, and those belonging to Nos. 1, 2, 5, and 6 companies take post as for firing.

The two centre sections of Nos. 1 and 5 companies advance to the front in such formations as may be applicable ; usually in line. At 200 yards' distance the two flank sections of each company follow, and maintain positions in rear of the outer flanks of the leading sections. No. 1 company regulates the pace and is also the company of direction.

Nos. 2 and 6 companies in reserve follow at about 300 yards' distance, in half-company columns, moving in rear of the right or left flank of the companies they are to reinforce according to their instructions.

At 500 yards further to the rear Nos. 3 and 7 companies follow in line or small columns, as the Second or assaulting Line.

At 1,000 yards from the Second Line Nos. 4 and 8 companies form the Third Line.

While passing through the 2nd zone, the centre sections of the two leading companies form line, if not already in that formation, and continue the advance with one pace between files ; the flank sections in support do likewise. The companies in the Second Line reduce the distance between themselves and the reserves of the First Line to 400 yards. The Third Line also reduces its distance from the Second Line.

At 900 yards from the position the firing line extends its intervals to three paces between files.

In the 3rd zone the firing line may commence to open fire, as occasion offers, on the position, the control of the firing resting with the captains of companies, and the leaders of units employed under them. The captains determine both the nature of the fire [usually at this stage by volleys] and its direction. The most stringent fire discipline is now necessary, in order that the best effect may be obtained from the fire of the rifles. The whistle will be found very useful in the firing line, calling attention to the position of the officers

and to the orders they give. The executive command to fire comes from the section leaders in each case, upon which the men form rank entire and fire as directed.

At 500 yards from the position the fire of the defence may render further progress difficult, and the extended line may be ordered to advance by alternate sections. It will soon require reinforcement, which it obtains from the supports. After reinforcement by the supports the orders to advance and fire, by alternate rushes and volleys, will be given by half-company commanders. When a flank section in support moves into the firing line, it is replaced by half the company which follows in reserve. As further casualties occur this half-company moves up into the firing line ; the other half of the reserve company will also similarly advance and reinforce on the opposite flank when requisite. Should the ground permit of it at this stage, the advance of the firing line may be made by alternate companies.

Between 800 and 500 yards the Second Line opens to one pace between files, and closes up to within 300 yards of the firing line. The Third Line also moves steadily forward.

The firing line continues to advance by rushes, pouring in a heavy fire of half-company volleys at each halt, until the enemy's position is approached so close [within about 150 yards] that further advance becomes impossible without unnecessary exposure.

Independent fire is now ordered, both with the object of subduing the fire of the defence before assault, and also of forming a screen of smoke, behind which the Second Line [which on getting within 400 yards of the enemy has already fixed bayonets] may push up to the front, and deliver the final assault.

On rapid fire commencing the Second Line moves forward at the double. As it approaches them the captains of the First Line blow their whistles loudly, as signal to cease fire and fix bayonets. All officers draw swords and take post in front ; the Second Line passes through the First Line, which latter immediately joins the Second Line.

The commanding officer then gives the word to charge,

upon which, with cheering, drums beating and bugles sounding, the position is vigorously assaulted by the Second and First Line.

The Third Line advancing rapidly when the position is carried, opens fire by volleys on the enemy as he retires, and prevents him from attempting to rally.

The First and Second Lines will now be reformed after this success.

#### THE BATTALION AS PART OF THE FIRST LINE IN ATTACK.

The battalion will be assigned a portion of the front to be taken up. In a brigade it would take post as the right or left of the two battalions composing the First Line. With a division it would be one of the two flank, or one of the two centre, battalions.

In each case the distribution would be the same. From column formations, the two front companies of each half-battalion form the firing line and supports, so that when their two centre sections are extended with intervals of three paces between files, they will cover the same front as the battalion would do were it deployed into line, taking into account the usual intervals. The remaining companies form the reserves. Thus :

|                        |                               |               |
|------------------------|-------------------------------|---------------|
| Nos. 1, 2, 5, 6. . . . | { Firing line.<br>Supports. } | } First Line. |
| Nos. 3, 4, 7, 8. . . . | Reserves.                     |               |

If the battalion forms from line, the right companies cover the front, the left companies form the reserves. Thus :

|                        |                               |               |
|------------------------|-------------------------------|---------------|
| Nos. 1, 3, 5, 7. . . . | { Firing line.<br>Supports. } | } First Line. |
| Nos. 2, 4, 6, 8. . . . | Reserves.                     |               |

The frontage to be taken up for a battalion of 800 men would be the frontage of the battalion if deployed (as it is all in the First Line), with the addition of three company intervals, and two half-company intervals, in all :  $400 + 18 + 6 = 424$  paces.

The functions of the battalion as part of the First Line may be gathered from what has been written.

The battalion may also be detailed to form part of the Second or Third Lines.

#### THE BATTALION IN RETIREMENT.

In the event of retirement becoming a necessity it will be conducted by alternate portions as follows :

1. *If no reinforcement has taken place.* Nos. 1 and 4 sections in support will cover the retirement of Nos. 2 and 3 sections of the firing line, opening fire as their front is clear. The firing line sections close on their centre, then halt and front between their supports, thus forming company. The right half-company immediately falls back, covered by the fire of the left half-company.

The reserves will either retire or wait for the firing line and supports ; in the latter case the retirement is continued by companies, volleys being given by half-companies.

2. *If the supports have reinforced.* If the battalion is acting alone each left half-company in the firing line covers its right half-company, while the latter takes up a fresh position in rear. The left half-company then falls back, making a stand to the rear of the right half-company.

With a larger force the retirement will be by companies, the right companies of each half-battalion in the First Line falling back first.

3. *If supports and reserves have reinforced.* If the battalion is acting alone, the retirement is by companies, those companies which furnished firing line and supports retiring first, while the reserve companies deliver half-company volleys.

With a larger force the retreat will be by half-battalions ; right half-battalions retiring first.

4. *If the Second Line has passed through the First Line.* The original First Line retires first, the firing line with its supports, and the reserves, closing on their respective centres, and together forming a new Second Line. If the battalion

is acting alone the assaulting line, which has so far covered the retreat of the First Line by a stubborn resistance, will retire by alternate companies. With a larger force the assaulting line will retire by half-battalions.

In every case the retreat will be conducted quietly and with steadiness, bayonets being unfixed ; and each portion after falling back about 100 yards will halt and front before delivering its fire.

Whenever possible the troops in the Third Line should be posted in a strong position near the front to support the movement of retreat.

#### THE BATTALION IN DEFENCE.

The battalion if required to assume a defensive position would be guided in its dispositions by the principles already detailed. If acting alone it should avoid taking up too much ground in the front line, as it is generally considered that at least 3 men per yard of front taken up are necessary for a strong defence.

The formations laid down for the attack may in great measure be adapted to the defence ; also many of the principles upon which the attack is based, may be inversely applied to the system of defence.

The battalion, consisting of 800 men, might be divided as follows in the defence of a position of about 250 yards in extent.

- 2 Companies as firing line and supports, and
- 2 Companies as reserves ; forming the First Line.
- 2 Companies as . . . . . Second Line.
- 2 Companies as . . . . . Third Line.

The various duties of each part of a defending force have been explained in detail in the pages devoted to the 'company in defence.' By the above disposition it will be seen that a large portion of the battalion is kept back for reserve purposes. This accords with the rule which should guide the defence, of always keeping troops in hand for offensive purposes ; no position is suitable for defence

which precludes the free action of the defenders in making counter-attacks, and all arrangements for defence should keep this end in view, unless the extreme weakness of the force renders it impossible to do so.

When a battalion acts as part of a larger force, it would be allotted a portion of the First Line of defence, or it might be placed in the Second or Third Lines. If in the First Line four companies might furnish the firing line and supports, with four companies in reserve. When large forces are engaged about 5 men per yard of front are usually calculated as being necessary for the defence of a position, including all arms and troops in reserve. This rule, if such it can be called, is, however, often subject to considerable modification, according to the special conditions of each case.

#### SUPPLY OF INFANTRY AMMUNITION.

The amount of small arm ammunition taken into the field for infantry is as follows :

##### Rounds

70 carried by the soldier.

30 in 4 small arm carts, and on 2 mules, with each battalion.

10 in the regimental baggage-wagons.

110

40 in the divisional ammunition column.

30 in the army corps ammunition column.

180\*

The position of the regimental reserves is settled by the general of each brigade. As a rule 2 small arm carts and 2 mules follow the battalion on the line of march, and the remaining 2 carts follow in rear of the brigade.

During an engagement the latter join the battalion ;

\* This refers to the Martini-Henry rifle. The number of rounds to be carried for the Metford rifle are not yet decided ; but it is said that the soldier will be able to carry 115 rounds for the same weight as that of 70 rounds of the Martini-Henry rifle.



taking post in rear of its centre, and the former are disposed, one cart and one mule in rear of each half-battalion.

A mounted officer is placed in charge of the regimental reserves. He has a warrant officer and the pioneers to assist him. He superintends the issue of ammunition from the reserves to the company carriers (2 or 3 privates per company under a non-commissioned officer), and its conveyance to the firing line.

Immediately before an action the 10 rounds from regimental baggage wagons are given out to the men ; a further issue from the regimental carts should if possible increase the amount carried by each soldier to 100 rounds.

During the action communication is kept up between the carts and firing line, partly by the mules, partly by the carriers, who are provided with bags for the purpose of conveying the ammunition to the firing line.

As the regimental reserve carts make issues, they should fill up from the nearest ammunition column.

Officers and buglers during the fight must keep themselves supplied with at least 40 rounds to distribute to the men.

#### ATTACKS WITH THE BAYONET.

We have alluded more than once to attacks with the bayonet. The principles which should regulate their application are very few, but they should be clearly understood. Except where opportunity offers of surprising an enemy by a rush upon him, or of seizing rapidly upon a position or ground which the enemy has not yet altogether taken up, no attack with the bayonet should be made, without having been preceded by such a heavy and close fire as to break the enemy's line and throw him into confusion. Attacks with the bayonet, when they are premature or rash, result in disorder and heavy loss, and are easily converted into a rout.

A bayonet charge once engaged in should be pressed vigorously home. The men should be shown in preliminary exercises that, at the close range at which bayonet charges alone can take place, the enemy's fire is really less effective than at

longer distances, and that, once the charge has commenced, the best chance of safety lies in advance, since the loss would certainly be doubled by retreating, at such a stage.

#### ATTACKS BY CAVALRY.

Should the extended firing line be attacked by cavalry in the open, the men may form files, or groups of fours, according to the amount of danger from the charge. It is always an advantage to leave clear spaces in the line, through which a portion of the cavalry is sure to pass without doing any injury. The extended line should then lie down, and allow the supports to complete the rout of the cavalry, or of what remains of them after their charge upon the fighting line. The supports, as a rule, will receive cavalry in line two deep. Denser formations can hardly ever be necessary; but if the cavalry presses upon the support, the flanks of the infantry may fall back, so as to form a two-deep oval round the commander.

## EXERCISE IX.

## INFANTRY COMBAT.

## ENGAGEMENT OF TWO PATROLS.

## IDEA.

1. A piquet (Red) posted near Garrads Cross sends a patrol, of eight men under a corporal, over Garrads Bridge, with instructions to reconnoitre the village of Glenfield, and ascertain the strength and position of the enemy who is supposed to be in the vicinity. The village itself is in ruins and deserted by the inhabitants.

2. A force (Blue), having just arrived from the south-west, has posted a piquet near Long Wood on Rainham Hill. A patrol, of twelve men under a sergeant, is sent out to reconnoitre in the direction of the source of Gorsham Brook. If it should meet an enemy's patrol of less force it is to drive it in, making, if possible, a prisoner or two. Objects are seen with difficulty at 600 yards, the day being dull.

## FIRST STAGE.

*Red.*—The patrol has marched to the bridge in route formation, and after crossing extends as it advances. The three men of the left group of the line are cautioned to observe the cultivated ground on the slopes of Rainham Hill, the hedges of which might afford cover to an enemy.

*Blue.*—The patrol, having examined the buildings of the Royal Arms public-house, is proceeding along the road in route formation, ten men on the road, and two men on the left skirting round the field at the back of the house. The point on the road has just reached the east angle of the field, when it halts and

sends back intelligence that a party of Red is crossing Garrads Bridge. The same news is shouted across the field by the flankers. The sergeant orders four men and the two flankers already in the field to line the portion of the hedge facing Garrads Bridge, and posts the other six men behind the house as a reserve.

#### SECOND STAGE.

*Red.*—The patrol advancing in extended order towards the village has gone about 200 yards from the stream, when the left flankers signal an enemy to the left front.

The corporal determines to approach and discover what force is present. He accordingly changes his course towards the Royal Arms, having four of his men extended in front, and the other four also in line, at one-pace intervals, about 50 yards behind.

When at 400 yards from the fence of the field, he is fired at by Blue. His fighting line continues to advance, taking advantage of temporary cover to halt and return the fire.

*Blue.*—The sergeant has no sooner completed his dispositions, than he perceives by Red's change of direction and new formation, that he has not done so undetected.

Owing to the careful advance made by Red, the sergeant cannot exactly tell how many men are in the party, but he estimates its strength to be less than his own, and he cannot see any sign of a support following. He therefore determines to attack Red in the open. He orders the men behind the hedge to bring a rapid fire to bear upon the enemy from cover, while he himself advances with his other six men in fighting order to attack. The men at the hedge are to continue firing till masked by the advance of the fighting line, and then to follow in support.

#### THIRD STAGE.

*Red.*—The fighting line is advancing from one point of shelter to another, wherever cover is afforded by scattered trees and the slopes of the ground, in the direction of the hedge whence the shots are coming. The corporal sees another party issue from behind the house, and, fearing for his right flank, brings up his support on that side.

As Blue nears him he also perceives its support leave the

cover of the hedge and advance against his left. Red is now conscious (he has lost one man killed and a second is wounded) of being outnumbered and outflanked. He accordingly attempts to retreat.

*Blue.*—The sergeant continues his front attack with the party from behind the house, and at the same time the men under cover leave the field and come up in support on his right rear. Red is seen to waver, upon which the sergeant orders up the Blue support to make a flank attack. This succeeding, Red is driven back in disorder towards the bridge, the corporal being severely wounded and the party without a commander. The Red patrol escapes over the bridge with the loss of two killed, and two wounded, taken prisoners, one of whom is the corporal.

The other four men regain their piquet with an exaggerated report of the force that defeated them.

Blue, after watching the bridge for a time, falls back slowly to his piquet with the loss of one man killed, and another wounded, who, as well as the two prisoners, requires to be assisted along.

#### OBSERVATIONS.

Blue might equally have gained his point by keeping under cover, since Red had shown that he intended to advance, probably for attack. Since, however, Blue elected to risk the action in the open, he was wise in retaining the party behind the hedge, who by their fire might prepare the way for the attack by his left party. Moreover, by converting what had been his front line into a support, he gained the advantage of attacking Red in flank, in the manner most likely to cut off his retreat; Blue thereby securing a prisoner, which he had been directed if possible to do.

Red was too hasty in joining his support to the fighting line. The enemy having shown himself at two points, made it the more necessary that the support should be kept in hand to cover a retreat, and for that purpose it should certainly have been placed in rear of the left flank.





**EXERCISE X.****INFANTRY COMBAT.****COMPANY AGAINST COMPANY.**

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**IDEA.**

In consequence of the report of a reconnoitring patrol, a company (Red) is ordered to advance from Wiley Hill to attack a company (Blue) which has occupied Pawley House grounds.

Approximate strength of each company: 3 officers, 5 sergeants, 5 corporals, 100 privates.

**FIRST STAGE.**

*Red.*—The company which is ordered to attack the detachment of the enemy just arrived at Pawley House, leaves Wiley Hill and marches up the valley by the road bordering the Mill Brook, crossing the bridge at the foot of Drayton Hill, and advancing with caution up its slopes.

Reconnoitring scouts are sent on to turn the left of the wood in front, and also to the angle of the fields on the north slope of the hill. They signal the wood apparently clear from either point of view; but on the left scouts venturing on a little farther to the south-west corner of the wood they are fired upon by a party of the enemy, which appears to be posted in a copse some 500 yards off, just south of the Pawley Park fence. At the same moment the scouts on the right signal Blue scouts between the two woods.

*Blue.*—Captain Z. commands the company which has arrived at Pawley Park with the view of holding it temporarily as an advanced post. The report of a reconnoitring party sent on in advance leads the commander to anticipate an attack from



Minton or Wiley Hill, both of which places are occupied by the enemy.

A preliminary examination of the ground showing that the south side of the Park presents a strong natural line of defence of banks, trees, and fences, against which an assailant would hardly care to advance, Captain Z. decides to guard it by only a small party of a corporal and six men. These men are posted in the copse immediately outside the Park fence facing Churton.

On the east, which is the most probable point of attack, Captain Z. lines the low Park fence for 200 yards with a party of 50 men under Lieutenant X.

The remainder of the company is held in reserve close to the house under the command of Lieutenant Y.

Four or five scouts under a sergeant are sent on to Drayton Hill to look out for the enemy. If driven in they are to take post as an advanced line on the Pawley-Churton Road, which crosses the front of the position at about 180 or 200 yards from the Park fence. This road has a low bank on each side.

These dispositions being made, the defenders, having had a fatiguing march, lie down to rest at their respective posts.

The scouts and the corporal's party continue to keep a good look-out to the east and south-east, and at length give simultaneous warning of the approach of the enemy.

#### SECOND STAGE.

*Red.*—The Blue scouts seen between the two woods retire before Red's advance.

Captain R., the commander, now divides his company into a firing line of one section with another section in support, both under the command of Lieutenant S., the senior subaltern; the remaining half-company being held in hand under Lieutenant T., the junior subaltern, to act as reserve or as Second Line, as circumstances may dictate.

On reaching the end of the wood which extends from west to east down the slope of Drayton Hill, the firing line opens out to three paces intervals between files, and finding the trees not too thickly planted for passage moves right through the wood to its western border. Here the leading section halts while still under cover.

The supporting section does not enter the wood, but halts in rear of it.

The scouts, with some reinforcement of their numbers, are now pushed on to the front and to the left flank, and draw fire from several parts of the Park fence, and from the fences of the roads in front of it, as well as from the corner of the copse facing Churton.

*Blue.*—The enemy has as yet only shown himself by his scouts. Captain Z., observing that the fire of these men is being returned by his own firing line in position behind the Park fence, sends peremptory orders to Lieutenant X. to restrain the men from thus early indicating their position to the enemy.

Captain Z. now mounts to the top of Pawley House to endeavour to obtain sight of Red's force, but he can see nothing of it, the woods intercepting his view of the eastern slope of Drayton Hill. There is, however, a gap between the two woods, and here the Blue commander detects with his glasses the movements of small groups and individuals of the Red force. This confirms his impression that the woods, more especially the southern portion of them, are occupied by Red.

### THIRD STAGE.

*Red.*—Lieutenant S. seeing that the general position of Blue, as shown by the fire from the Park fence drawn by the Red scouts, is quite to his right front, determines to prolong his own line to the right. He accordingly orders up half his supporting section, to line part of the border of the northern portion of the wood which faces the defenders' main line. When this is completed, Lieutenant S. opens fire by half-section volleys upon the position from the whole of his line, directing his men while firing to keep well behind cover at the edge of the wood.

Red's fire is immediately returned by the defenders, and Captain R. coming up to the edge of the wood is enabled to mark the extent of the Blue position by the smoke of the rifles.

He notes that a small wood, which is in fact Pawley Wood, is opposite to the left of Blue's line, its end running up to within a short distance of the Park fence at that point. Captain R. accordingly resolves to combine a flank attack from Pawley Wood with a frontal attack from Drayton Wood, and transmits an order to Lieutenant T. to move up with one of his sections to the right flank, keeping under cover of the trees during the change of position.

*Blue.*—Captain Z., on the enemy opening fire from the edge of the southern wood and from the portion of the border of the northern wood immediately adjoining it, believes an attack to be intended on the right flank of his position. His impression to this effect is strengthened by his hearing a dropping fire commence on the extreme right, which is really only the fire of his own party in the copse, drawn by some Red scouts who have worked round under cover of the slopes of the Hill. He orders up a section from the House to remain in close support to the right flank of his line.

#### FOURTH STAGE.

*Red.*—Lieutenant T.'s section has pushed up through the north end of Drayton Wood, and taken post without being perceived by Blue, just inside the western border of Pawley Wood.

The remaining section of the company is now told off to act as a Second Line, and moves up to the east end of Drayton Wood.

The firing line under Lieutenant S. leaves the cover of the wood and advances, opening out a little more as it does so, the men being in single rank. The remainder of the support follows in two groups of six men each, at a distance of about 50 yards from the firing line.

The Red scouts in advance move up to and gain the line of the Pawley-Churton Road, the Blue scouts falling back and getting into the ditch outside Pawley Park fence.

On nearing it the Red firing line also makes a rush for the road, lying down on it behind the low bank which bounds it on the western side. From this cover fire is recommenced by Red, the two groups of the support also coming up intact and filling vacant places in the line.

The section acting as Second Line under Captain R. has reached a point about 100 yards in rear, where an irregularity of ground gives fair shelter; it is lying down in open files.

The opportune moment for the flank attack having now arrived as Blue's attention is fairly engaged by the frontal fire, the Red section in Pawley Wood dashes out, and crosses the intervening space, about 180 yards, which lies between the end of the wood and the Park fence opposite to it.

At the same instant Captain R. leaves the Second Line under a sergeant, and runs up to the firing line, giving the order for rapid fire as he reaches it. This commences just as Lieutenant

T.'s party reaches the Park fence on the right flank, and scrambles over it into the Park.

*Blue.*—On Red's fighting line advancing from Drayton Wood, Captain Z., fearing for his thin line of defence, more especially on the right flank, orders on his section of the reserve to strengthen it. The men are distributed along the fence, but more on the right than the left of the line.

The remaining section is still in reserve at the House, and when Red's flanking movement is perceived, Captain Z. instantly orders it up. The distance, however, which it has to pass over is 300 yards, and there is some slight delay in signalling it to advance, so that before it can arrive Lieutenant T.'s party has gained the Park fence and has taken Blue in flank.

#### FIFTH STAGE.

*Red.*—Lieutenant T.'s men form at once into groups as they get into the Park, take what cover they can find, and open a rapid enfilading fire on the defenders' firing line, which wavers and falls back from the Park fence.

Captain R. calls up his Second Line, which advances at the double in single rank with bayonets fixed; as it passes through the First Line the latter ceases firing at the captain's whistle, fixes bayonets, and joins in the advance, all rushing forward together by word of command. Captain R. leading the way, the Park fence is easily crossed with a few casualties.

Lieutenant T. orders his men to cease fire as the frontal attack is made, and reforms his men to act as a reserve if required.

Blue now retires with considerable loss before the determined advance of the Red company, but is not followed up in pursuit beyond the limits of Pawley House grounds.

*Blue.*—The last section of the reserve arrives too late to prevent the line being taken in flank, and Captain Z., seeing the position of affairs, restrains it from entering into close combat, in order to make use of it for covering the retreat which is now inevitable. The Blue force has lost a number of its men, and the remainder are demoralized by the enfilading fire of Red.

The commander stations the reserve section at a clump of trees behind the left flank, and then orders the retreat just as

Captain R.'s men cross the fence. The retirement is commenced from the right flank, but is not conducted in a very orderly manner nor without further loss of men, one of the subaltern officers being also killed.

The reserve section does its best to cover the retreat, under the personal direction of Captain Z., although pressed by Lieutenant T.'s party, and a portion of the company is by this means enabled to withdraw in safety to the main road leading west from Pawley Village. The pursuit is not pressed by Red beyond this line.

#### OBSERVATIONS.

Blue's errors were : first, in taking up so long a line of defence as 200 yards, without a support in hand, when his force did not exceed 100 men ; second, a consequence of the first error, in reinforcing the firing line from his reserve, at too early a period of the combat ; third, in failing to foresee an attack being made from Pawley Wood, which lay so close to one of his flanks.

As regards the last point, Captain Z. should have occupied this small wood as an advanced post from the very commencement, and even a very small party placed therein would have prevented his being in a measure surprised by a flank attack from that quarter.

Blue's reserve was also kept too far from the front line. This was probably occasioned by some idea on the part of the commander of rallying upon Pawley House, in the event of having to fall back from his more advanced position.

The last reserve section was, however, skilfully handled in covering the retreat, as shown in the final stage.

Red made no mistake of any consequence, and was accordingly rewarded with complete success.





## CHAPTER X.

### ATTACK AND DEFENCE OF CAVALRY.

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#### TACTICAL EMPLOYMENT OF CAVALRY IN ACTION.

THE general principles of the employment of cavalry on the field of battle have been briefly stated in a former chapter.

In considering more in detail the action of this arm in attack and defence, it will be convenient to discuss, first, the mounted service, in which cavalry performs its normal functions ; and secondly, the dismounted service, which is deserving of separate notice in the present day.

The nature of the proper tactical employment of cavalry in combat, is pointed out to us by a consideration of the source from which it derives its special attributes. The horse gives to cavalry two qualities—rapidity of movement, and weight of shock. By means of the former, cavalry can pass with celerity from one part of the field to another during action, in order to operate by surprise on distant points, to profit by any mistakes on the part of the enemy, or to reinforce quickly a weak part of the defence. If driven back or required elsewhere, it can retire as rapidly as it has advanced. In the pursuit, also, after an engagement, cavalry, by its superior mobility, comes into preferable use before the other arms.

By its weight in shock action, cavalry has the power of breaking the enemy's formations, or of exercising moral control over his movements, by its presence close by or near at hand.



## CAVALRY IN ATTACK.

Cavalry attacks in line, generally in close order, sometimes in extended order.

The *attack* or charge in close order, which is the more usual formation for cavalry, especially in large bodies, is made in two ranks if numbers allow, the men riding knee to knee. This compact formation gives the greatest possible power of shock, and it is always employed in charging cavalry.

The attack in extended order is made use of against infantry or artillery, when it is desirable not to present a compact object to the fire of the enemy and when the effect of the shock action of the charge is not required to break a formation. It may also be employed, on occasion, in the pursuit of a broken or dispersed force of the enemy of any arm. It is laid down in our Regulations, that in extended order the men advance in line with intervals between files of from four to eight yards. With a strong force the attack would thus be made in two ranks; with small bodies of men it would necessarily be made in rank entire.

Cavalry 'attack' commences by a movement in advance, increasing in rapidity as the enemy is neared, which is followed by the shock of encounter, and is terminated by personal engagement with sword or lance. The moral as well as physical effect produced by the charge, is kept up by the physical effect of the naked weapon upon the dispersed fractions of the enemy. It is necessary for complete success, not only that the enemy's formation should be broken, but that his tactical dispositions should be altogether upset, and that he should suffer such serious loss as to be unable to re-enter the lists as a combatant during the rest of the engagement.

In the chapter already referred to, we have mentioned two fundamental principles for the conduct of cavalry: that it should constantly seek to attack the enemy's flanks, and that it should never attack at all without keeping a portion of its strength in reserve. The second of these principles is in

direct connection with the first ; for as the enemy's flanks should be assailed because they are the weakest points, so an officer of cavalry should protect his own flanks from attack by keeping troops in hand. As cavalry combats are almost always composed of a succession of frontal and flank attacks, it may be deduced from a consideration of the principles quoted, that whichever of two adversaries can last make a flank attack upon the other will probably remain the victor.

The absolute necessity of keeping a reserve disengaged, during attack, is not only clearly shown by the foregoing, but by the following considerations. After a successful cavalry encounter the victors and the vanquished are alike in disorder, and the most that can be said in favour of the former is that they can rally more quickly. If a reserve is in hand, it will cover the operation, and complete the enemy's defeat. But if no reserve has been kept by the victors, the smallest body of fresh troops coming up in aid of the enemy, may rapidly turn victory into disaster, for cavalry are never less able to resist attack than immediately after a charge.

If the introduction of arms of precision has had the effect of limiting the general employment of cavalry in masses on the field of battle, it has, on the other hand, increased the opportunities for attack by smaller bodies upon infantry in their dispersed formations. The tactical employment of cavalry in pure attack, during an action, must not therefore in any way be looked upon as an obsolete manœuvre.

In preparing for attack, the aim of a cavalry commander should be to place his men in such a position as to render their subsequent charge upon the enemy as effective as possible. Thus the force should be kept out of sight and out of fire until the time for action arrives. Ground scouts should be sent out to reconnoitre to the front and flanks, so as to assist the commander by their inspection of the ground, and reconnoitring groups must also be despatched to the front and flanks, in order to afford early and constant intimation of the position of the enemy. These precautions should never be neglected.

The proper time for attack must be anxiously watched for

by the commander, as, if not taken advantage of at the moment, the opportunity for cavalry action is generally lost. The most suitable occasions would be, when accidents of the ground enable the force to reach striking distance unobserved, so that the attack becomes a surprise ; or when the enemy, appearing to feel the effects of infantry fire, hesitates in his advance, and seems disorganized ; or when the infantry itself, being pressed by the enemy, requires time to rally and reform, and to have attack diverted from it for the moment. The commander should also carefully watch the enemy's artillery for opportunities of successful attack upon his guns. Any symptom of disorder among the troops of the enemy should, if possible, be taken advantage of by the cavalry. Were a village, or wood, for example, about to be vacated by the enemy, the cavalry should look out for the moment of retreat, and charge the defenders as they leave cover.

In all such cases the exact instant of time selected for attack is of the highest importance, and a correct and instinctive judgment in seizing upon such a moment is of the utmost value to a cavalry leader. If the attack be premature there is no chance of surprise, and the design becomes apparent to the enemy ; should it, on the other hand, be too long delayed, not only is the golden opportunity lost, but the enemy, warned in time, may himself attack during the deployment, thus reversing the intended action.

The influence of ground upon the movements of cavalry is of far greater importance than in the case of infantry. Although good, well-trained, well-mounted cavalry will ride in fair order over broken ground, the effect of a charge under such circumstances is much impaired. If the soil is saturated with wet and the ground heavy or swampy, or if the land is ploughed, or deep in sand, cavalry move with more or less difficulty. Generally open ground, even if much varied by accidental features, is favourable, provided there are passages by which small columns can move from one open space to another. In open, level ground any attempt at surprise on the part of cavalry becomes impossible, but open, undulating ground is the best for such purposes, and

the next best is a combination of open and enclosed or wooded ground.

The actual space necessary for a cavalry attack is proportioned to the strength employed. There should be room enough to the front for the cavalry to advance, with sufficient force deployed, not only for the charge, but for the further *mêlée*, and perhaps pursuit.

There should be space at the sides for the movements necessary in a flank attack. The ground should also afford means of retreat to the rear, and there should be no insurmountable obstacle, upon which, if unsuccessful, the cavalry might be suddenly forced back.

As regards the direction of cavalry attack, two conditions may be considered :

1. DIRECT OR FRONTAL ATTACK ;
2. FLANK ATTACK ;

both of which may also take place in a simultaneous movement.

Under the head of *direct attack* may be included every form of frontal encounter, even though the direction of the actual charge may be more or less oblique to the enemy's line.

In the direct attack, the result is in proportion to the weight and strength of the horses, and to the steadiness and compactness of the charge. It does not follow, even though the direction of the charge be exactly perpendicular to the enemy's front, that two mathematically straight lines should meet in collision. In the preliminary advance to the charge, the line may be preserved over favourable ground with more or less exactness ; but during the charge itself, when every horse lays itself down to its own racing speed, the cohesion will frequently be interrupted, and certain gaps may be left in the attacking line, by the opening out of files.

Similarly, the enemy, whether cavalry or infantry, receives the charge in a line of more or less irregularity, so that the precise moment of collision is not the same at each point of its length. This, added to the involuntary opening out of the attacking line, tends to break it practically up into a

series of groups or knots of men, at the moment of actual shock.

The most forward riders, on the best horses, will probably draw out in front of the attacking line, although it should constantly have been impressed upon the men at their drill, that the greatest effect is to be obtained, by keeping a compact formation and a good alignment at the moment of shock. The officers hold their own well in advance, for once thrown back amongst their men they no longer can be said to lead. After the first instant of shock is past, the individual valour of officer and man, and skill in the use of weapons, become the important elements in the final result.

We have said that, as a rule, no attack should be made by cavalry, without a support or reserve. In most cases, and always when attacking cavalry, if with sufficient force, there should be both a support and a reserve. Should the strength not allow of both, one body would have to combine the functions of a support and of a reserve. The support follows the attacking party, echeloned on the exposed flank, at such a distance to the rear that it may efficiently support but not be affected by the disorder of the leading body. In general 180 to 250 yards would be a sufficient distance. Its duties are to meet a flank attack on the part of the enemy, or to make a flank attack upon him, either in combination with the frontal attack, or as a diversion to cover the enforced retreat of the first line. Should there be no reserve, a part of the support if possible should be kept unbroken for all contingencies, especially for the disengagement of the first line if the attack should fail.

The reserve, if there is one, follows, about 350 to 400 yards from the first line, in echelon, in rear of the flank not covered by the support. It should be kept in hand as long as possible, until a critical moment arrives, when it may either decide the victory, ward off attack upon the front line when in disorder, or arrest pursuit.

Plate XXI. illustrates the foregoing description and gives the normal formation of a cavalry brigade in attack, as prescribed in the Cavalry Regulations of 1887. It should, how-

ever, be noted, that the tendency at the present time is to increase the strength of the 1st Line, so as to ensure if possible a superiority over the enemy at the first shock. According to the most recent German practice, the 1st Line, whenever the ground admits of it, should be composed of half the cavalry force; the supporting or 2nd Line should take two-thirds, and the reserve or 3rd Line one-third, of the remainder. Thus, in the case of a brigade, six squadrons would be in the 1st Line, four squadrons in the 2nd Line, and two squadrons in the 3rd Line. This formation is now being tried in our cavalry service, but it is not yet adopted.

Under the head of *flank attack* may be included all cases of attack from any direction, in which a portion of the assailants' line overlaps or outflanks the enemy, and is, therefore, able to wheel up at the moment of attack, as well as those in which attack is made directly upon the enemy's flank. A movement of the former kind may be made with advantage by a line which is of greater extent than the enemy's, the portion of the assailants' line which overlaps, either at one or both ends, wheeling inwards and falling upon the enemy's flanks. If the attacking line is only equal to the opposing line, this mode of assault is dangerous, for, by attaining an advantage on the one flank, it would lay itself open to a corresponding disadvantage on the other. Should it be attempted, the weak flank of the assailant must be refused by keeping it in echelon. It is evident that in this case, of attack upon the flank by wheeling inwards, the shock action is not represented at full value.

The direct attack upon a flank is by far the most telling, and usually successful, movement. It can be effected by the smallest possible detachments, even against large bodies of troops, provided that the attack is unlooked for on the part of the enemy, and vigorously pushed before he has time to meet or avoid it.

Cavalry should endeavour to carry out such attacks, by working up under cover to striking distance from the enemy's flanks. In a varied country facilities are afforded for such

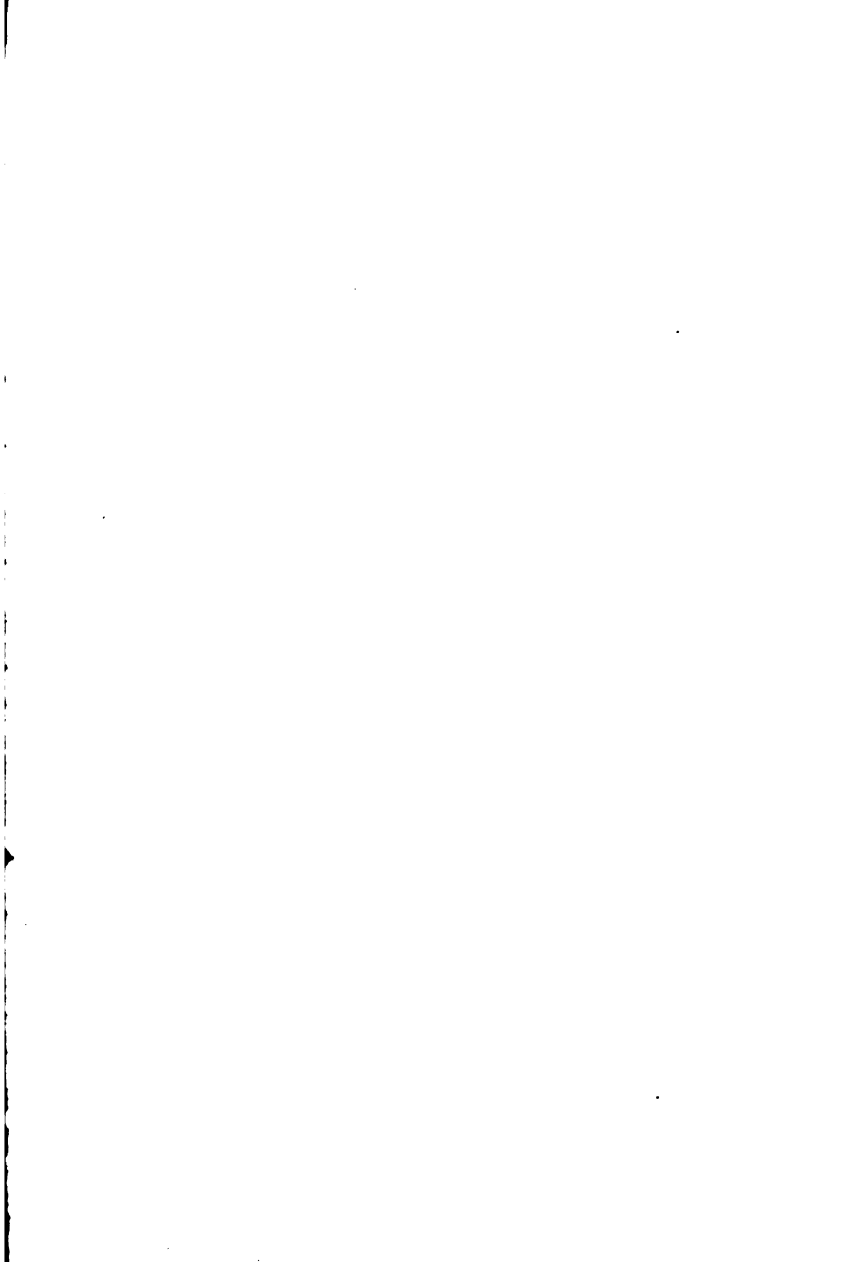
manceuvres, though a watchful enemy would hardly allow of their accomplishment. When such mode of approach is impossible the flank attack must be made in combination with a frontal attack, as shown above. Attacks of this description are termed *offensive flank attacks*, and the detachments by which they are effected are called *offensive flanks*. They follow behind the wings of the attacking line, echeloned to the flank, and move out therefrom at an increased pace just before the charge, so as to combine with the frontal attack by a simultaneous movement on the enemy's flank. They are also employed to ward off or resist counter-flank attacks on the part of the enemy during the advance, when they are called in turn *defensive flanks*.

In moving forward for attack, the preliminary portion of the advance should be made in line of squadron columns. This formation possesses both mobility and flexibility, and presents but small objects to artillery fire. The squadrons can readily turn obstacles, and take advantage of cover, and rapidly form line for attack whenever required.

The force moves off at a walk, which is increased to a brisk trot when it comes under the enemy's fire. The trot and the column formation are both preserved until within 500 or 600 yards of the enemy, when line should be formed, and the advance continued at the gallop. This pace is then gradually increased till within seventy to fifty yards of the point of attack, when the word 'charge' being given, the line receives a powerful impulsion which culminates in the final shock.

If the charge is successful, and the support or reserve undertakes the pursuit, the portion of the force which has charged should endeavour to rally and re-form as soon as possible, so as to serve in its turn as support to the pursuing cavalry.

If the charge is unsuccessful, the attacking force should retire in such manner as to avoid clashing with the support or reserve, which, at this moment, should be ready to attack the enemy in flank on his attempting to pursue. With this object in view, the first line should as a rule fall back over the ground by which it has advanced. It should, of course,







rally, and come up again, if possible, in formation, to take its place as a support or reserve, as may be required.

One other mode of employing cavalry, in combination with infantry, may be mentioned. A false attack or threatening movement is made by cavalry, which then retires before the enemy's cavalry, drawing the latter under fire of concealed infantry at close range. The enemy's cavalry is thus almost completely destroyed or rendered powerless for the remainder of the action.\*

#### ATTACK IN DISPERSED ORDER.

The attack of cavalry in extended or dispersed order may be effectively employed under various circumstances, sometimes in combination with the attack in close order.

The theoretical disposition of an attacking line in extended order, as already quoted from our Cavalry Regulations, would hardly appear at first sight to admit of such independent action as is allowed in other armies under similar conditions, and for which, it must be said, the experience of two wars has shown the necessity. In practice, however, our mode of attack is much the same, for cavalry in dispersed order must necessarily attack in 'swarms,' any attempt at preserving regular formation of line with equal intervals between files, when once the men are launched to the front, being practically impossible, and not desirable, as tending to hamper individual action. Such general cohesion, however, must always be preserved, as shall ensure the attacking force being well in its leader's hand.

Except in the case of very small bodies of cavalry, the attack in dispersed order should as a rule be made only by a portion of the force, the remainder being kept in reserve, or acting as a 2nd Line according to circumstances, in close order.

In the Austrian and Prussian services, the smallest proportion so kept in hand would be a fourth part of the attacking force. Thus, if a squadron were ordered to attack in

\* This was frequently practised by the Prussians in 1866; a manœuvre much hated by the Austrians.

swarms, a section or *peloton* of the squadron would be retained in close order as a reserve, while the remainder would attack in dispersed order. With ourselves a half-troop would represent the smallest portion of the squadron to be kept in support, under like conditions.

Circumstances may demand the employment of a small portion of the force only in extended order.

Thus, should the enemy's cavalry turn and break without awaiting a threatened attack, the intended charge might be checked, and the more rapid pursuit necessary, of a flying and dispersed enemy, taken up by a portion of the force only in dispersed order. The remainder would follow in close formation.

Extended order in combination with close formation may sometimes be made use of in attack. Thus if a squadron is directed upon artillery protected by an escort, a troop or half-troop should swarm upon the guns, while the remainder of the squadron in close formation attacks the escort.

A general attack in extended order by a strong line of cavalry is sometimes necessary, as being the only mode in which cavalry can advance in the face of a heavy fire without utter annihilation, from which no degree of gallantry can save it. Such an attack in dispersed order, the line gradually closing in from the flanks, may possibly succeed ; but the movement is always dangerous, and should not be attempted unless the force is exceedingly well disciplined, and accustomed to rally quickly after attack. It should be well backed up by cavalry in support.

A general attack may also be made use of in open country for the pursuit of a broken enemy, whether of cavalry or infantry, or to act against artillery, or against a line of extended infantry under favouring conditions.

Sometimes a general demonstration is made by a large force of cavalry in this order, without any real intention of attack, thus holding the enemy for a time, or forcing him to lose time by manœuvres.

In working cavalry in extended order, it is especially necessary that the men should have been habituated to rally

quickly after the attack. On the rally being sounded, whether during the advance or while retiring, every man should close at once on his leader, facing towards his proper front, without regard to his former place in the ranks.

#### CAVALRY IN DEFENCE.

In modern tactics the opportunities for the employment of cavalry in a defensive battle are still numerous. The enemy's cavalry must be watched, especially in varied ground, to forestall attacks upon unprotected flanks of the infantry, and generally to prevent outflanking manoeuvres. The flanks of infantry and artillery in forward movements must be guarded. In the case of attack by the enemy at any special points the cavalry should seize opportunities of time and ground for charging, if the assailants waver or hesitate in the advance, or immediately after the assault has been made.

Cavalry may also be used in large bodies on the defence, for masking movements and making demonstrations.

The local defence of cavalry may be dismissed in a word, for, as has been said, the leading principle of this arm is that of attack. Unless in such cases where a portion of the force can act dismounted (of which more later on), the only means of local defence, available for cavalry, lies in counter-attack, or in quick avoidance of the enemy when attack is impossible.

#### THE CAVALRY SOLDIER IN ATTACK, ALONE OR IN GROUPS.

The cavalry soldier acting alone, whether from being separated from his comrades or for other reason, and finding it necessary to attack, must act boldly but with circumspection, knowing that his success depends not only upon the valour he displays, but upon the management and preservation of his horse during the encounter. He should endeavour to approach his adversary unseen, until within charging distance, and then ride at him with determination. If the soldier carries a sword, he should endeavour during the encounter

to keep his right front opposed to the enemy, or at all events to prevent the enemy getting upon his left rear, which with a swordsman is the weak point. If the soldier carries a lance, he can shorten or lengthen his thrust with great facility on the left side, whether to front, flank, or rear; on the right side he has a very long thrust, although it is not so strong; but he should always endeavour as much as possible to prevent the enemy getting on his right rear, which with a lancer is the weak point.

Against infantry, in personal encounter, every parry should be made, so that the strong part of the cavalry weapon, *i.e.* the fort of the sword or the butt of the lance, strikes the feeble part of the infantry weapon, *i.e.* the bayonet fixed on the end of the rifle.

A group or small party of cavalry in attack must be guided by the conditions of the case, as to the order in which it fights. Thus a group or patrol, of some half a dozen men, would probably charge a similar cavalry patrol knee to knee, but in rank entire. If attacking an infantry patrol, moving, as is most likely, in open formation, the cavalry group would swoop down upon its enemy in dispersed order. But against infantry in any collected formation, where the strength of the cavalry detachment would enable a front of fair extent to be shown without extension, either in one or two ranks, and the ground is favourable, both the moral and physical effects of a charge in close formation would probably be greater than if made in extended order.

When attacking in close order, any undue crowding together of the files at the instant of the charge tends to impede the free movement of each horse, which at no time more requires to be independent. At the moment of shock, the horse, although kept well in hand, should, if necessary, receive pressure from leg and spur. The greatest effect in a charge being derived from the uniform velocity of the force, whether large or small, the pace must not be so hurried as to bring up the horses to the attack blown or even distressed. All the horses should be kept square to the front, and never, if it can be avoided, allowed to get out of hand.

## SMALL BODIES OF CAVALRY IN ATTACK.

With very small parties of cavalry it is not advantageous, as a rule, to retain a support during the attack. One or two ground scouts would precede the party about 200 yards to the front, during the advance, in order to reconnoitre the ground. If a surprise be intended, the scouts must be especially careful to keep themselves concealed from the enemy's view.

Where a strong troop is acting alone, the attacking portion might consist of half the troop formed in two ranks, the other half-troop forming the support, in echelon at 150 to 200 yards' distance.\*

All parties of cavalry under the strength of a squadron, should, as in the case of that body, direct their charge by the centre, the men being careful to keep up to and dress by the centre, without closing in or opening out more than is unavoidable, the flanks being also not too forward.

## THE SQUADRON IN ATTACK.

The form of attack by a squadron, the complete tactical unit of cavalry, may be looked upon as typical, and would be carried out in the following manner. The strength of the squadron (the war establishment of which is given at page 26) may be taken at 48 files or 96 horses.

The point of attack having been indicated at some 1,000 yards off, two or three ground scouts would be sent to the front, and a small reconnoitring group to the front and to either flank. The scouts are to reconnoitre the ground to be passed over in the advance, and the groups are to search carefully all ground that might conceal an enemy, and thus prevent a sudden attack upon the squadron, by giving the earliest intelligence of the enemy's presence.

The squadron, on receiving the order to advance, moves off at a walk, in a small column formation. If the column of fours is made use of in the first instance, it should be formed with due regard to the exposed flank, so as to be more quickly brought into fighting formation. Thus, if the

\* *Vide* last part of footnote next page.

right flank be most threatened, the column of fours should be formed by advancing from the left of the squadron.

The walk may be preserved, unless time is of importance, until the squadron comes under the effective fire of the enemy, when a brisk trot must be assumed and kept up to 600 or 500 yards from the point of attack. Column of troops may then be formed, and the rear troop in such case, checking its pace, follows in echelon on the exposed flank, at about 150 to 200 yards' distance from the leading troop which forms the attacking force.\* The latter now breaks into a gallop, the rear rank taking order if the ground is at all broken, swords being sloped or lances carried.

The squadron leader heads the attacking force, the other officers of the troop following him in line in advance of their men. The troop in support is under the command of its own troop leader.

The distances given are to be understood as referring to an attack on a force in position. The principles to be kept in mind are, that whatever the distance to be passed over in the preliminary advance, it should always be traversed at a rapid pace if under the enemy's fire. The trot is therefore assumed so soon as the zone of effective infantry fire is entered. The column formation should be preserved until just before the pace of the gallop is to be assumed. This should not be too soon, as the result would be to distress the horses before the final shock. If the enemy is advancing to meet the attacking force, the pace must be so regulated as to be greatest at the moment of actual encounter.

The gallop should not be too hurried when first entered upon, but the speed gradually increased until charging distance, or about fifty yards from the point of attack, is reached. Then the command to charge being given, swords

\* Should the squadron be formed in three, or four, field troops (see p. 26), the instruction would be similar, but as a rule only one troop would be kept back in support. It must, however, be understood that when the whole force does not exceed a squadron, it would often be better to charge in one body without retaining any portion in support. This the commander must decide.

are brought to the engage and the pace is quickened to the utmost extent which can be attained in good order. As the charge is about to commence the scouts clear off to either flank.

The support following in echelon on the exposed flank should endeavour to manœuvre against the flank of the enemy, or ward off any flank attack made by the latter during the advance ; being thus in readiness to take an offensive or defensive part in the engagement, according to circumstances.

Should the attack of the squadron be made upon cavalry, and the ground be favourable, the support should have special orders to endeavour to combine a flank attack with the frontal attack, acting for that purpose to a certain extent independently of the leading troop.

In attacking cavalry it is an advantage to the assailants if they can charge down a slight incline towards the enemy, the slope of the ground giving an impetus which nothing can stop.

The attack of a squadron upon infantry should as a rule be only undertaken when one of the following conditions exist :

1. The infantry should be demoralized or be inferior in quality ;

2. Or the infantry should be taken by surprise, the cavalry having been able to approach unobserved to striking distance ;

3. Or the infantry should have expended their ammunition, or be already broken by the fire-action of opposing troops ;

4. Or the infantry should be in extended order and exposing unprotected flanks to sudden cavalry attack ; or, being in extended formation, be induced to close up by the moral effect of a demonstration of cavalry, and thus offer a better target for rifle and artillery fire.

In the last case the attack in extended order would often be the best method. Squadrons or small bodies of cavalry may sometimes produce a similar moral effect by simply hovering about the infantry and threatening to attack, especially if they have sufficient cover to conceal their true numbers.



The effect of the fire of a line of infantry being greater towards its left flank than towards its right, the latter flank should, if possible, be selected for the attack by cavalry. In attacking infantry the advance up a slight incline against the enemy is an advantage to cavalry, as infantry fire is always apt to fly high.

Should the attack of the squadron be upon artillery, it is hardly necessary to observe that if opportunity occurs it should be when the guns are limbered up. If the guns are in position they should be attacked either on the flanks or in rear. Should the guns be escorted by other troops the squadron must attack both the guns and the escort at the same time. A portion of the squadron, say half a troop, would attack the guns in dispersed order while the remainder of the squadron attack the escort in close formation.

The attack upon guns would be made either to cause them so much annoyance as to force them to limber up and move, or else, if the cavalry are strong enough, not only to annoy but to capture or disable the guns.

If unlimbered, the horses and limbers of the guns should be carried off (the gunners probably getting under the guns may be neglected), or at all events attempt should be made to cut traces and kill horses. If the guns are limbered up they may be carried off, in which case the gunners and drivers must necessarily be first killed or overpowered. If at any time it is necessary to arrest the progress of a battery on the move, no measure is so effectual as shooting one or more of the wheel horses.

Should the squadron be ordered to attack in pursuit, a portion of its strength might be advanced in dispersed order, the remainder following with closed ranks in case of an offensive return being made by the enemy. A half-troop would probably be sufficient to open out in pursuit, whilst the remainder follows in support.

Should the squadron, however, be ordered to attack in dispersed order, for the purpose of harassing the enemy, or of making a demonstration against extended infantry, a small portion only would be retained in support. Thus half

a troop might be kept in close order, the remainder being advanced in extended formation.

The squadron leader would lead the extended line, which would swarm down upon the enemy. The support would follow at a trot, ready either to advance in reinforcement at a more rapid pace, or to form a rallying point for the squadron if repulsed or ordered to fall back.

#### DISMOUNTED SERVICE OF CAVALRY.

The service of dismounted cavalry, which, we learn from the military annals of past ages, has been always more or less employed, is certainly destined to hold in future warfare a still more prominent place.

The issue to our cavalry of a firearm of superior range and precision, has opened up to this arm opportunities of action which it had not before, and results may consequently be anticipated from the foot service of cavalry, which could never have been attained in the days of the old weapon. The reason is plain : the time required for the dismounted horseman, in case of defeat, to regain his horse, has not increased, but the extended range of his weapon, by keeping the enemy at a greater distance, has given the cavalry soldier more time to accomplish his retirement, than under former conditions. Cavalry may therefore dismount and maintain a defensive action till the enemy gets within 200 yards of them ; if over-matched they will still have time to remount and ride away.

There is also the possibility of offensive action, which may in future devolve at times upon dismounted cavalry. ' When, owing to the conformation of the ground, or to the enemy's occupation of sheltered positions, such as small villages, buildings, coppices, defiles, or bridges, which cannot be turned, when nothing can be effected or hoped for by mounted action, and there is no infantry at hand, there is no other course open to cavalry than to dismount, and to clear the way by an attack with carbines on foot, so as to gain its object and be able to continue its advance.\*' In

\* *Cavalry in Modern War.*

this manner, both in the Franco-German campaign and in the Russo-Turkish war, cavalry had frequently to fight. The history of a portion of the latter war contains numerous instances, many of which will be found in the account of General Gourko's first expedition across the Balkans, in July 1877, when the Russian cavalry did good service dismounted. Gourko had a large force of cavalry, 4,000 men, principally dragoons and cossacks. The dragoons were armed with the long-sword, and also with a short rifle with bayonet; the cossacks had a rifle but no bayonet, besides their lance and sword. Both were trained to fight on foot as readily as on horseback. In his advance to the Balkans Gourko first of all captured Tirnova, (which was defended by three Turkish battalions), with a brigade of dismounted dragoons. He subsequently crossed the Balkans near the village of Hainkioi, the garrison of which he surprised.

On July 15 he remained at Hainkioi collecting his troops. He sent out three squadrons of cossacks towards Yeni-Zagra to cut telegraph wires. Three Turkish battalions opposed them, on which the 9th Dragoons were sent out by Gourko as a reinforcement. The cossacks and dragoons fought on foot, and defeated the Turkish infantry, on this occasion.\* The telegraph, however, was not cut till the next day by the cossacks.

Continuing to advance towards his objective, viz. the Shipka Pass (on the Turkish side), Gourko reached Maglis on July 16, having had a sharp fight with a body of 3,000 Turks on the way. Here again the Russian dragoons fought on foot; they advanced with fixed bayonets against the Turkish infantry, who, however, fell back without accepting a hand-to-hand struggle.

On the next day the Russian general approached Kasanlyk, having with him a force of 3,000 cavalry, 3,000 infantry, and 16 guns. The Turks were in position before Kasanlyk to defend their town. The Russian troops being divided into three columns for the advance, it fell to the lot of their cavalry to attack; they fought dismounted, for they had no infantry with them. 'The fight began at 7 o'clock in

the morning, but it was a small affair, although it lasted for two or three hours. The cavalry turned the right flank of the Turks, who thereupon began to retreat upon Kasanlyk ; the cavalry, still outflanking them, cut off their retreat from Karlova and turned them towards Shipka, and then converted their retreat into a rout, in which they lost 400 prisoners, and their three guns ; the Russian loss was 14 men.\*

Many other examples from the record of this expedition could also be quoted, showing how constantly the Russian cavalry fought on foot and held their own against the Turkish infantry.

In considering this subject we will confine ourselves to discussing the conditions under which trained cavalry dismounts for exceptional action on foot. These conditions should not be confounded with those already detailed, under which infantry may be trained to act as mounted riflemen, with the sole object of transferring their fire-action with rapidity from one point to another.

The carbine with which the British cavalry are now armed is capable of rapid and accurate fire at fairly long ranges, but the coming magazine carbine, which is sighted up to 1,800 yards and has no recoil, will be a still better weapon. It is evident that the effect of such an arm of precision is altogether lost unless employed on dismounted service, it being understood that from the saddle the carbine is only to be used for purposes of signal.

There are many positions in which cavalry accustomed to act on foot may render most valuable assistance, both to their own and to the other arms of the service, particularly in an enclosed country, where it is difficult to attack an enemy mounted.

It is recommended that cavalry should not dismount in any place where mounted opposing cavalry could attack them

\* The above account is taken from the *Russian Campaigns in Turkey*, 1877-8, by Lieutenant F. V. Greene, U.S. Army. Major-General C. B. Brackenbury, R.A., who was present at these affairs, bears testimony to the efficient service there rendered by dismounted cavalry.

before they can remount, or where the led horses would be under direct fire ; and it is advisable that the dismounted men should not be too far from their led horses, in order that they may quickly remount, and also that the movements of dismounting, and of re-forming as mounted men, should be effected rapidly in the most convenient manner, so as to open fire or to retreat as quickly as possible.

The general conditions under which cavalry would be required to act dismounted are these:

- a. To hold localities until the arrival of the infantry.
- b. To force a defile which blocks the advance, when it would take too much time to turn it.
- c. During a retreat to offer enough resistance to compel the enemy to deploy, thus gaining time.
- d. As a support to defeated cavalry retreating through a defile.
- e. To defend billets, camps, &c.

The method of acting on dismounted service with a squadron would be much as follows ; it being understood that as a general rule, applying to any strength other than very small bodies of cavalry, the numbers of men to be retained mounted as a support should be equal to the numbers furnishing the dismounted party.

If the ground is favourable for advancing and retiring under cover, the squadron would be brought up as close as possible to the point to be occupied on foot, but so much to one flank that the horses will not be directly in rear of the dismounted party when it has taken post.

One troop being reserved as a mounted support, the other troop is ordered to dismount with carbines, either by sections or by odd (or even) numbers. In the first case three out of four men dismount, in the second case two out of four. In both cases the men who are to dismount advance a horse's length for that purpose. The mounted numbers then move up to hold the horses of the dismounted men.

The dismounted men form quickly in two ranks to the front, under the squadron leader and one troop leader. The men of each front rank section, covered by their rear rank

section, whether two or three out of four dismount, form a group. The second troop leader retains command of the support and led horses, which he keeps well under cover.

The dismounted men, on the line to be occupied being shown to them, gain their position, at the double when time is precious, being as a rule (necessarily an approximate one) extended at two yards' interval ; they take post behind cover, lying, kneeling, or standing, according to the nature of the ground.

It is evident, from a consideration of the above instructions, that a squadron thus acting alone, and keeping one troop as a mounted support, can dismount either half or three-fourths of a troop, and that at war strength the maximum number of some 36 carbines could alone be furnished by the squadron.

Similarly a troop could put 12 or 18 carbines into position. Under this strength a mounted support could not be retained.

Under certain circumstances, however, for defensive operations of a more permanent character, such as holding an important position until the infantry come up, the whole of the men of a squadron may be dismounted and the horses linked, a sufficient guard being left with the latter.

In column of route, if a portion of the squadron is required to act dismounted to the front, the leading troop would be preserved mounted, the dismounted men being sent forward from the rear. If the fire is required to a flank, should the column be in fours, either three out of four or only the odd (or even) numbers of the named force may dismount. If the column is in sections, three or two men of each section dismount ; and if the column is in half-sections, the dismounted portion may be furnished by the right or the left files, according as they are required to act to the right or left flank.

If patrols or scouts have to dismount for this service, they must hold their own horses while they fire, and should have been previously well practised in the manœuvre.

When patrols are in a formed body every second man may dismount, the others being horseholders.

During dismounted service the cavalry soldier always keeps his carbine at the trail, except when loading or firing.

The foregoing and other instructions are given in the Cavalry Regulations, but it is evident that precise rules cannot be laid down for this duty, as the conditions under which the men are required to act vary in almost every case. Squadron and troop leaders must therefore be allowed considerable scope for the exercise of their judgment and discretion, in directing the dismounted action of their men.

In Continental armies, as with ourselves, the question of the value and best method of utilising and working dismounted cavalry has of late years attracted much attention. Although it would be beyond our limits to enter into lengthy considerations of foreign systems, a few brief notes on the subject may be instructive to the student.

First as regards the manner in which the led horses should be held, which has always been a question of difficulty in every system of dismounted service.

In the English cavalry a mounted man takes charge of one or two led horses according to the Regulations we have quoted.

In the Prussian service one mounted man holds two horses.

In the Austrian service one mounted man holds three horses.

In the Italian service one mounted man holds two led horses.

In the Russian cavalry a large proportion of the mounted horseholders have charge of two led horses, and all are trained to hold that number if required.

In the French cavalry one mounted man holds three or two led horses, but the Regulations provide that in certain cases, on the defensive, one man, *dismounted*, may hold all or half the horses of each rank of a peloton, consisting of twelve files. Colonel Bonie, in an interesting treatise on this

subject,\* has put forward as an advantage attendant upon this method, over and above that of a larger number of carbines being liberated for dismounted action, that the horseholders will more easily find cover for themselves and for their charge than if they remained mounted, and being thus less likely to be disabled there is greater chance of the horses being held securely till they are again required.

It would certainly seem as if a dismounted man could hold and manage a greater number of horses than a mounted man, more especially if his charge were excited or troublesome, but against the system it is urged, that the men cannot mount and get away again as quickly as by the ordinary method.]

Another question of interest is the strength and composition of the support to be retained intact, when one portion of the force is acting with carbines and a further portion holding horses.

In our service the general rule laid down is, that a force should be preserved mounted, equal to that which furnishes the dismounted portion.

In the Prussian service a mounted support is generally preserved, which, with large bodies of cavalry, is of considerable strength, but with small bodies, such as a squadron acting alone, may be only represented by mounted patrols. The dismounted men are in general divided into two portions, a fighting line, and a support.

In the Italian service, in the case of a squadron or larger force, a mounted support is always retained, varying from the fourth to the half of the whole strength. With a half squadron, one portion or section is dismounted, the other remains mounted in support. With smaller bodies the whole force may be ordered to dismount, and formed into an advanced group and a supporting group of dismounted men.

In the Russian service the mounted support is formed of four picked men from each section, making sixteen for the squadron. These men are all well mounted, and they take up position between the led horses and the dismounted men.

\* *Étude sur le combat à pied de la cavalerie.* Paris.



The latter are divided into two portions, skirmishers or fighting line, and support to the leading portion.

In the French service a squadron as a rule dismounts three pelotons, one of which acts as a dismounted support to the other two; the fourth peloton forms the mounted escort.

A mounted support or reserve would certainly appear indispensable, where the force employed is of any strength; but in the case of a small force a well-posted dismounted support could perhaps more effectively defend the operation of remounting the fighting line, which body when mounted could then enable the men of the support to regain their horses. It must be remembered that a dismounted support of half a troop, properly placed, could hold its own against a squadron of hostile cavalry. Were the same support mounted it could not stand for a moment against the attack of a squadron.

On the other hand, it is to be urged with reason, that the force disposed as above would be much longer in getting away than if the support were mounted.

A detail connected with the dismounted service, deserving of special attention, is that the soldier when acting on foot should not be encumbered with too much equipment. In some Continental armies, the cavalry sword is left attached to the saddle when the soldier dismounts, and in the case of the Russian dragoons the bayonet, which is separately carried, is then taken into use. A long cavalry sword is a great encumbrance to a man about to act as a rifleman, and if extensive use is to be made of dismounted cavalry it would appear as if the sword should be left with the horse. Von Schmidt in his 'Instructions for Cavalry' says on this head: 'As the sword is a great hindrance to the dismounted man in broken ground, it should be unbuckled and hung on the saddle by the part of the waistbelt between the two slings. It is thus not in the way, and will not be lost if the led horses are moved; moreover, the men can easily take their blades on remounting without buckling on their sword-belts.'\*

\* Von Schmidt, translated by Col. Bowdler Bell, p. 192.

The employment of dismounted cavalry in minor tactical operations adds at once a defensive power to fractions of the force of this arm, which renders its employment more than ever desirable. Cavalry which can rapidly dismount a portion or the whole of its force, and protect itself by fire-action, possesses something of the nature of two arms, and thus becomes doubly valuable.

When to this is added the power of rapid advance to tactical points beyond immediate reach of the infantry, and of seizing these even temporarily until the arrival of supports, it is evident that the co-operation of cavalry becomes more than ever acceptable to the commander of a mixed force.

## EXERCISE XI.

### CAVALRY COMBAT. SQUADRON AGAINST TROOP.

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#### IDEA.\*

1. The commander of a force (Blue), the main body of which is stationed near Leyton, directs a party to be sent from Thornton to destroy the bridges on Glenfield Common. If time admits, Glenfield and Clip Bridges are to be first blown up and then Farley Bridge, but in any case it is imperative that Farley Bridge be destroyed. Chorley Bridge has been carried away by flood, the stream being much swollen by recent rains.

A strong troop of (Blue) hussars is accordingly directed to proceed upon this service. While the men of the troop are being assembled, and are getting their horses ready, a patrol is despatched in advance, with orders to go on to Farley Bridge and prepare it for demolition.

2. The commander of a force (Red) stationed near Danmoor purposes to advance in direction of Hatford, and is desirous of preserving the bridges that lie near Glenfield.

A squadron of (Red) dragoons is accordingly detached to secure passage of the streams at these points.

#### FIRST STAGE.

*Blue.*—At the opening of the first stage, the Blue troop has arrived at Farley Hill, about 1,000 yards from the bridge. The patrol, which consists of six pioneers, and two additional men as scouts, under a sergeant, having had a quarter of an hour's start of the troop, has been at work at the bridge for some time,

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

and has nearly prepared it for demolition with gun-cotton. The scouts, who are out on the Common, come suddenly riding back, with intelligence of the presence of the enemy on the high ground to the east.

The scouts of the troop on reaching the spurs of the hill overlooking the stream, receive signal to this effect from the bridge; and at the same time they themselves perceive a body of troops (probably cavalry, from the appearance of dust and other indications,) descending the road between Ray and Ashdown Hills. Small groups of cavalry are apparently scouting on both these hills.

The captain of the hussars determines to push on, and, while his pioneers continue to prepare Farley Bridge for destruction, to cross over and endeavour to drive back the opposing force, with a view to carrying out the instructions he has received respecting the other bridges. Should he find himself in presence of a superior force, he will be in a better position on the farther bank to cover the operations of his pioneers, than if he remains on the near bank. The Blue troop accordingly quickens its pace for the bridge.

*Red.*—The squadron consisting of A and C troops has just entered the road between Ray and Ashdown Hills, exactly one mile from Farley Bridge, when the scouts on the advanced spurs of the hills report 'a small party of the enemy at the bridge;' then immediately afterwards, 'cavalry scouts on Farley Hill, and dust of a small column to be seen farther off in the distance.'

The commander of the dragoons immediately determines to endeavour to secure two of the bridges. C troop, which is in rear, is directed to detach itself and move by Five Roads Cross on Clip Bridge, A troop continuing to advance on Farley Bridge.

The pace of both troops, moving in columns of fours, is quickened to a smart trot.

#### SECOND STAGE.

*Blue.*—The Blue commander on arriving at Farley Bridge is informed by his scouts of Red's strength and the disposition of his force. The troop crosses the bridge, while the pioneers continue to prepare it for demolition. The sergeant reports to

the commander, as he crosses over, that the bridge will be ready to be blown up in three or four minutes.

One half of the troop goes to the front at a trot, forming into line for attack, while the other half-troop supports, about 200 yards in echelon to the right rear. This formation having been assumed, the Red dragoons are perceived about 600 yards off advancing towards the bridge, and the leading Blue half-troop moves off at a gallop to attack them supported by the rear half-troop.

*Red.*—The troop advancing upon Farley Bridge still keeps in column of fours and preserves the trot until it reaches the Glenfield Road, which is about 800 yards from Farley Bridge. Here the scouts meet the commander with intelligence of the arrival and strength of the Blue cavalry. The dragoons form line for attack, and quicken the pace to a gallop on perceiving the hussars about 600 yards to the front.

The ground, which slightly undulates and slopes towards the stream, prevents the Red commander from seeing Blue's support, and the strength of the half-troop opposed to him (only twelve files of front) appears so inconsiderable, that he confidently expects to ride it down.

### THIRD STAGE.

*Blue.*—The leading half-troop of the Blue hussars meets the Red troop in the charge at a point about 400 yards from the bridge, and the superior force of Red drives back Blue. But the other half-troop of hussars, coming up in support, falls upon Red's left flank at the critical moment when he is shaken by the effect of his charge, and forces the dragoons to retire in disorder.

*Red.*—The charge of Blue's support has disorganised A troop, as shown, when the captain of C troop, who has just passed Five Roads Cross on the way to Clip Bridge, and perceives the engagement taking place, decides to go to the assistance of the beaten force. This he is the better able to do, as his scouts report that there is no sign of an enemy near his own point of direction, Clip Bridge.

C troop accordingly wheels round to the right, and advances at a gallop to the scene of combat.





## FOURTH STAGE.

*Blue.*—The hussars endeavour to re-form after their success, but have hardly done so before they are attacked by the fresh Red troop, with the result that the Blue formation is completely broken. The hussars, with difficulty, retreat over the bridge, which by this time has, however, been prepared for demolition by their pioneers.

As A troop of the dragoons, which has now re-formed, advances in pursuit, the bridge is successfully blown up by Blue. Several of the hussars are cut off and made prisoners, but the rest have had time to recross before the bridge is destroyed.

*Red.*—After the action thus described, by which the hussars are driven over the stream with loss, without the bridge being, however, saved from destruction, the dragoons move on to Clip Bridge. Here they receive intelligence from their scouts that Chorley Bridge no longer exists, and that the stream is so swollen as to be impassable at any point north of its source at Spring Wood. All passage to the west from Glenfield Common is thus found to be interrupted, and intelligence to this effect is immediately transmitted to head-quarters at Danmoor.

## OBSERVATIONS.

In this Exercise, Blue has a manifest advantage in being so much nearer to the bridge, the common object of both sides, at the instant that each force detects the other's presence. This advantage he improves by judiciously determining to cross the bridge, and give battle on its farther side, notwithstanding a possible and even probable superiority in numbers of the enemy.

The Red commander, when the enemy was first sighted, should have directed the whole of his force upon Farley Bridge, sending a patrol only to Clip Bridge. Had he then made his attack by successive troops he would probably, the slope of the ground being in his favour and his numbers superior, have been successful in both charges, and would have driven Blue back over the bridge before its preparation for destruction could have been completed, thus effectually securing the passage over the stream.

As it was, Blue was not prevented from carrying out his object, though he suffered much loss in the operation.



## EXERCISE XII.

CAVALRY COMBAT. SQUADRON AGAINST TROOP, THE  
LATTER PARTLY DISMOUNTED.

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IDEA.\*

1. A force (Red) has just posted its outpost line of observation on Wiley and Churton Hills facing north. The enemy (Blue) is believed to be somewhere in the neighbourhood of Wyverne or Northam, but accurate information as to his strength has not yet been obtained and is much desired.

About 4 P.M. a spy brings in news to the effect that three men (Blue), one of them a commissariat sergeant, are at Garrads Cross, in charge of forage, which has been collected at that place and is about to be removed to Northam at daybreak. The men are said to have orders to show themselves as little as possible, and to keep concealed should the enemy's patrols appear.

The commander of the Red outposts decides to attempt the capture of these men, in order to obtain from them the desired information. A strong patrol, consisting of a troop of dragoons furnished from the reserve of the outposts, is accordingly ordered to proceed to Garrads Cross with this object.

2. On the same afternoon a convoy (Blue) of empty carts, got together at Northam and the vicinity, is on the march to Garrads Cross, with intention to halt there for the night and return in the morning with the forage.

The convoy is escorted by two companies of infantry and a

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

squadron of lancers. The squadron is in advance and the infantry marching with the carts.

#### FIRST STAGE.

*Red.*—Captain W., with whom is Lieutenant M., is in command of the troop, which consists of 48 men with a proportion of non-commissioned officers. Leaving the reserve at 4.30 P.M., the troop, preceded by an advanced party of a sergeant and eight men acting as an advanced-guard, passes through the line of sentries, by the road traversing Holm Woods, at 4.40 P.M., and reaches Stanton Bridge at 4.56 P.M., the pace being only five miles an hour in order to save the horses.

Halting at the bridge the commander notes that it presents a favourable position for making a stand, should he be pressed in retreat. At about 100 yards on the near side of the bridge, the road to Minton branches off from the main road to the right, running for some distance parallel to the river bank, which here bends round to the south-east. At the fork made by the two roads, and between them and the river, is a small wood, which borders the Minton road for 200 yards, and, being three-sided, has one of its short sides facing Stanton Bridge. On the opposite side of the main road is a space of open grass-land forming the north slope of Yatton Hill, which extends for half a mile along the river as far as Yatton Bridge. The right side of the road thus presents cover for concealment, and the left side fair galloping ground, fit for cavalry movements.

Before crossing the bridge the commander consults his map, and determines to take the troop round by the lower river road as far as Triangle Wood, in order to avoid possible observation in crossing the high ground of Gorsham Hill, the road over which would be the direct route to Garrads Cross. He directs two intelligent men of the advanced party to be sent up to Windmill Hill as a flanking patrol. Signal is to be made from the hill to the scouts of the advanced party on the lower road as soon as the flankers are satisfied that the way is clear. The flankers are then to ride cautiously on to Gorsham Hill to reconnoitre the north side of the heights, one of the men keeping the troop in view as it proceeds along the lower road, while the other man looks out for the enemy. The patrol is to re-join the advanced party at the point where three roads meet between Triangle Wood and Garrads Cross, to make report of what has been seen from the high ground.

The troop then proceeds to Triangle Wood, arriving there at 5.10 P.M., and halts; its advanced party also halts at the junction of the three roads. The men of the flanking patrol here re-join, reporting that they can see no sign whatever of an enemy in any direction. Captain W. and Lieutenant M. ride up to the advanced party, leaving the troop at the wood.

*Blue.*—The squadron of lancers under the command of Captain X. is in advance of the convoy marching south along the East Enton-Garrads Cross Road.

It is preceded by an advanced party of twelve men under a sergeant acting as an advanced-guard; two advanced scouts and a corporal lead, and flankers are out on either side of the advanced party. The scouts are only about 400 yards in front of the leading section of the squadron.

#### SECOND STAGE.

*Red.*—The place where three roads meet, at which Captain W. and Lieutenant M. have joined the advanced party and received the report of the flanking patrol, is about 600 or 700 yards from Garrads Cross. Captain W. has been informed that the men who are to be carried off are quartered in the first house to the left, a small one, at the south entrance to the hamlet. He details Lieutenant M. with the advanced party, a sergeant and eight men, to effect the capture. The farrier, who is an active, powerful man, is also added to the party. Lieutenant M. moves off towards Garrads Cross preceded by two scouts, a flanking patrol of two men being also detached to a hill on the right to give instant signal should the enemy come in sight. The troop follows under Captain W. at 300 yards' distance.

At 5.15 P.M., the advanced party arrives at the house described by the spy and surrounds it. Nothing is to be seen of the Blue soldiers, but they have probably been warned by the inhabitants of Red's approach. After some difficulty the door is opened, and the owner of the house is forced to acknowledge the presence of the men. Under threats of compulsion the two soldiers are surrendered, the villagers assisting to bring them out, but the commissariat sergeant is declared not to be there. Upon this the sergeant and farrier dismount and entering the house succeed in finding the man hidden in a loft. He is immediately mounted on one of the spare horses brought for the purpose, but throwing himself off and declaring he will

not ride, he is obliged to be placed behind the farrier and strapped to the horse. Meantime one of the other men tries to escape and is shot in the attempt. The third is placed on a spare horse, and the party prepares to return after a delay of some five or six minutes, the prisoners being placed in the centre of the troop, which has halted a short distance from the house. At this moment the flankers on the hill near Hanley Wood signal 'enemy in sight,' evidently, from the direction indicated, upon Redburn Hill.

Captain W. immediately gives the order to retire. The troop goes about, and with the prisoners in the centre starts off at a trot, towards the three roads. The former advanced party drops behind as a rear-guard, the flankers coming in from Hanley Wood.

The commander now gives the word to gallop; but owing to the farrier's horse, which is carrying a double load, being unable to keep up, the trot is almost immediately again obliged to be resumed. On reaching the three roads the leading section is directed to turn to the right, and the troop directs its march straight upon Stanton Bridge by the hill road.

*Blue.*—The point of the advanced-guard has reached the enclosure of the Manor Farm, when the leading man catches sight of Red cavalry at Garrads Cross. He immediately signals the corporal who is in rear. As the corporal comes up, he makes sign to the left flankers, who are on the east side of the farm, to ride on to the crest of the hill in their front, and look out. On coming abreast of the farm on the main road, the corporal clearly makes out not only the party at Garrads Cross, but the troop halted on the road a little farther off. He instantly sends back intelligence to the squadron.

Captain X. is 400 yards to the rear with his squadron, marching along the East Enton Road. On receiving the news he gives the order to trot out. His advanced party has already got on to the Manor Farm and is trotting down the hill towards Garrads Cross. The Red troop is seen in full retreat, a distance of about 1,400 or 1,500 yards separating it from the Blue squadron.

When the advanced party reaches Garrads Cross, the leader learns in a moment what has occurred, and sees the body of the man who was shot. He sends back word to Captain X., who is close in rear. Captain X. gives orders to pursue and retake

the prisoners. The Blue squadron passes through Garrads Cross without halting, and, cutting off a corner of the road, gallops across the open ground. On reaching the three roads the trot is again resumed, Captain X. advancing up the hill with some caution, his scouts and advanced party first examining the high ground.

#### THIRD STAGE.

*Red.*—The commander pushes on over Gorsham Hill as quickly as possible.

He sees he has got five or six minutes' start, but that he is being pursued by a much larger force than his own. Captain W. accordingly decides to make a stand at the bridge, and gives his orders to Lieutenant M. as they go along.

On passing over Stanton Bridge, the troop turns sharp on to the branch road leading to Minton, and halts behind the wood already mentioned. The prisoners are sent on, the farrier in charge of the commissariat sergeant, a dragoon leading the spare horse upon which the other man is mounted, and a sergeant to ride behind with a pistol ready in case of an attempt at escape. They are to pass over South End Bridge and get inside the outpost line as quickly as they can.

Half the troop is told off for dismounted service under Lieutenant M., and furnishes sixteen men with carbines, who immediately push through the wood to its northern edge and take post in line carefully concealed, just inside the border, facing and thus commanding the bridge at 100 yards' distance. The rear-guard remains mounted at the bridge, with strict injunctions not to let a single man of the pursuing cavalry pass over until the main body of the squadron comes up. The horseholders of the dismounted party keep the horses behind the wood on the road, near the Minton end of the wood. The mounted half-troop is drawn up on the Minton Road in support, hidden by the corner of the wood. It faces the main road, which at this part is wide and will admit of the advance of a small party (ten files or so) in line.

These arrangements are completed in four minutes from the time the troop arrives behind the wood. The advanced scouts of Blue now come up to the bridge and attempt to cross it, but the Red rear party keeps them back. Blue's advanced party then tries to force a passage; but the Red group gallantly meets it on the bridge in a hand-to-hand encounter, and succeeds in stopping its advance, until two minutes later the leading

section of the squadron, which comes down the road by Stanton Farm at a rapid pace, reaches the bridge. The Red rear party, in pursuance of orders it has received, instantly breaks before Blue and clears away down the main road. It has lost one man killed, and another is severely wounded.

*Blue.*—When the squadron gets up to the plateau of Rainham Hill, it leaves the road and again breaks into a gallop which it maintains till the crest of the hill overlooking Stanton Bridge is reached. At the commencement of the pursuit the Red troop has had about six minutes' start, and the Blue cavalry has gained somewhat upon it by superior pace, but has also lost distance by the check on ascending Rainham Hill, so that on the whole the Red troop may be said to have still about five minutes' start, when the Blue squadron has got to the south crest of Rainham Hill.

Blue's flankers are on Windmill Hill, but they can see nothing of Red, as the main body is behind the wood and the prisoners have by this time got down into the valley near South End Farm.

The leading scouts and advanced party are on in front of the squadron and are just gaining the river. They see a party at the bridge which they not incorrectly take for the rear-guard about to dispute passage. They charge Red; but in the confined space the combat becomes personal, and the lancers do not succeed in getting over the bridge for the intervening two minutes that elapse before the head of the squadron reaches the spot.

Captain X., who is leading his squadron, also thinks the small party of Red at the bridge is about to sacrifice itself as a rear-guard, in order to gain a little time for the retreat of its main body, and he sees nothing whatever to make him suspect an ambush. He relies on his scouts, and he does not mark, as he rides eagerly down the slope of the road, that not one of his advanced party has got over the bridge, and that he has not a single scout on the south side of the river. He only sees a paltry opposition to his passage at the bridge which his squadron will easily overcome, and he rather quickens the pace than holds the men back.

#### FOURTH STAGE.

*Red.*—As the first section of the Blue squadron gets over the bridge and the chief part of the leading troop is upon it, the

Red group giving way, fire is suddenly opened upon the lancers by Lieutenant M.'s party in the wood. Several of the men of the leading sections fall, the Blue commander himself is wounded, and the greatest confusion occurs; the riders pressing over the bridge in rear being unable to prevent their horses from tumbling over the fallen lancers in front, thus helping to block up the road.

The Blue commander, apparently seeing that the only chance for his force is to disengage it from the bridge, and that the ground to the west along the river bank is open, shouts out to his men to push on over the bridge and to wheel to their right on to the open ground. Several of the leading men have already crossed and have got on to the open. The remainder, urged by the voice of the commander and by the other officers, also pass over, but not without some difficulty and much loss. They endeavour to re-form their broken ranks under shelter of the slope of Yatton Hill, some 300 or 400 yards from the fatal bridge.

As soon, however, as the principal portion of the lancers have crossed the river, the mounted Red half-troop issues from its cover behind the corner of the wood, led by Captain W., wheels to the right along the main road, then again to the left when clear of the fence up Yatton Hill, and, breaking into a gallop, charges the yet unformed lancers who are about 300 yards off.

The smoke from the fire of the dismounted party in the wood which is hanging about the road favours this movement, and the Red cavalry are not perceived till they are bearing down at full speed upon Blue.

Lieutenant M. now remounts his party and advances to Yatton Hill, in support of the leading half-troop.

The lancers, however, do not attempt to retaliate, being completely broken by Captain W.'s charge.

*Blue.*—Captain X., though severely wounded, is endeavouring to rally his men on the river bank when the attack of the Red half-troop thus described takes place. The effect of the steady charge of the compact although small force of dragoons, upon the already disorganized ranks of the lancers, is so great that Captain X. does not attempt to turn upon his adversary, but draws off his men to re-form in the direction of Yatton Bridge.







## FIFTH STAGE.

*Red.*—The leading half-troop rejoins the one in support, and both continue their retreat by the main road with all speed, passing through Holm Woods at 5.54 P.M.

On reaching the line of sentries the commander slackens speed, and finally arrives at the post of the reserve at six minutes after 6 P.M. Here he finds the prisoners have already been handed over in safety, by the sergeant who had them in charge.

*Blue.*—The lancers return to Garrads Cross, a patrol being left behind to reconnoitre the position from which the dragoons have come. On arriving at Garrads Cross, where the infantry have by this time established themselves, Captain X. reports to the major in command the unsuccessful result of his pursuit and the probable proximity of the Red troops. The forage is accordingly ordered to be removed at once, while it is still possible to secure it without further reinforcement.

## OBSERVATIONS.

In this Exercise an illustration is afforded of the increased power which cavalry derives, by employing a portion of its force on dismounted service when occasion presents itself.

In the execution of the service for which the Red troop was detailed, the commander made no mistakes.

On the other hand, the Blue squadron should not have crossed the bridge until the cover on the other bank had been examined; but the immediate fault lay rather with the leader and men of the advanced party than with the commander of the squadron, who trusted to his scouts and received no warning from them.

The instant that the leader of the Blue scouts found the bridge barred to his advance, he should have halted the squadron in his rear. A party would then have been sent on to his assistance from the squadron, which, united to the advanced party, would have either forced a passage, or drawn the fire of the Red dismounted party, in either case discovering the ambush and saving the main body of the squadron from loss and defeat.

## CHAPTER XI.

## ATTACK AND DEFENCE OF THE THREE ARMS.\*

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THE THREE ARMS IN COMBINATION.

THE commander of a force of the three arms acting independently, should have the clearest possible conception of the general objects which it is intended he should carry out, in order that when he comes in contact with the enemy he may form a correct decision as to whether he should attack or act on the defensive.

Should his position and means at command be such as to allow of either course being pursued, the preference should generally be given to the attack, in order to secure the undoubted moral advantages which attend this course of action.

But if the nature of his position and resources necessitate his assuming the defensive, he should seize upon the first favourable opportunity of turning the defence into the attack.

Whether, therefore, as an initial proceeding, or taken up only for a time during the progress of an engagement, the defensive should be employed as a means to an end, the better to assure success when the offensive is finally assumed.

\* As the organization of artillery does not enable it to undertake operations alone, its tactical action is treated under the head of Attack and Defence of the Three Arms.

## THE THREE ARMS IN ATTACK.

The commander who takes the offensive initiative has the advantage of choosing the time and within certain limits the place of attack, his adversary having as it were to await his pleasure on both these points before the final arrangements for defence can be made.

The assailant can move his force in any direction either for the purpose of real attack, or to deceive the enemy by demonstrations or false attacks, while at the same time he can push his troops in force against a weak point of the position. The very fact of attacking gives also moral force to the men, who will always suppose that their commander considers them superior to the enemy, and, in advancing, a force leaves its killed and wounded behind, passing out of reach of demoralizing sights and sounds.

On the other hand, the assailant has to attack on ground chosen carefully by the enemy, which therefore rarely presents advantages to the attacking force.

As ground, however, cannot be made to order, the attacking commander should look out for any accidental conditions which may be turned to his benefit. High ground within artillery range of the position, from which he can bring his guns to bear with superior fire as a preparation for attack, would be very important.\* Or if the country is at all enclosed, or even undulating without enclosures, it can hardly happen that there are not sheltered places, affording some sort of cover for troops, near to the position, which would at all events enable a portion of the assailants to take part in the attack without overwhelming loss.

In offensive tactics we may consider three general modes

\* It should, however, be understood that high ground is only advantageous for artillery inasmuch as it enables the gunners to see distant objects. Otherwise the best ground for artillery is that which enables the path of the shells to be as nearly as possible parallel to the surface of the ground. Thus at long ranges guns placed low would sweep the reverse side of an enemy's position on a hill.

of attack, one of which the commander of a combined force must select, as the most suitable for his purpose.

1. **FRONTAL ATTACK**, which would mean a direct advance upon the whole of the enemy's line or position.

As a general rule, this form of attack is unadvisable, as even in case of success, the result is not decisive; the enemy's line of retreat being unassailed, he simply falls back to a position more to the rear. There may, however, be situations where the nature of the ground prevents any other mode of operation, or where the frontal attack may be made use of to feel the enemy and ascertain his exact dispositions. in preparation for a concentrated attack upon one of his weak points, as soon as they are discovered.

2. **COMBINED ATTACK UPON FRONT AND FLANK.**

In this case the enemy is attacked in front at the same time that a portion of the force is directed at one of the flanks. An attack upon the flanks by itself unaccompanied by a frontal attack is not advisable, except in the case of small detachments acting against one another, or unless the attack can be effected by surprise, in which case the enemy is unable to meet it in time by a change of front. Were a strong force in position attacked solely on the flank, it would quickly form up its reserves to a new front, the troops of the original front coming up in support. For a flank attack therefore to succeed, it must, as a general rule, be accompanied by a frontal attack, sufficient to hold the enemy to his original position.

An attack upon both flanks combined with a frontal attack can only be attempted under circumstances of great superiority of numbers, without which it would become a most dangerous operation, enabling the enemy to give the counter-stroke at a weak point of a straggling line and beat the assailants in detail by cutting their force into two.

In small engagements where the numbers are inconsiderable we have said that the flank attack may be made alone. In such case a consideration may arise as to which flank it may be most desirable to attack, where one presents cover for concealing the movement, and the other, though offering no

cover, is nearest to the enemy's line of retreat, which might thus perhaps be cut off. Surprise being here the element most essential to success, as carrying with it the greatest moral effect, the flank should certainly be chosen which affords the means of approaching unobserved, even though the result of action in this quarter may not be so decisive as it would be in the other.

Should the attack be of greater dimensions, the element of surprise, and consequently the question of a covered approach, become of less importance. Here an attack upon the flank nearest the enemy's line of retreat would give best results, as being more decisive, so that, other considerations being outweighed, this course of action would probably be adopted. The moral effect of threatening the enemy's communications would also in this case count for something.

Sometimes the movement against a flank should constitute the real attack, that against the front being only sufficiently maintained to hold the enemy in position, and prevent his concentration on the threatened flank. Here the frontal attack has all the advantages of the defence together with the moral advantage of an expected diversion to be caused by the flank attack. The nature of the ground would influence the adoption of this mode of attack, but in any case it would be prudent not to follow it unless the attacking commander, if unsuccessful, could still cover his line of retreat in falling back, or unless, as may happen on occasion, he could afford to retreat in a new direction and abandon altogether his old line of operations.

3. CONCENTRATED ATTACK UPON A WEAK POINT, to break through the enemy's line or force his position.

This mode of attack, if the most difficult of execution, is undoubtedly in case of success the most decisive, the enemy being broken into fractions which can subsequently be beaten in detail. The enemy's line of retreat may also thus be arrived at, and his communications cut before he can recover himself. The attack must, however, always be made with force sufficient to resist a counter enveloping attack on the part of the enemy, which might otherwise be disastrous

in its results. The increased range of modern guns and rifles has made this attack more hazardous than ever, for a concentrated fire-action can now be brought to bear on the assailant, not only from all parts of the defence in his immediate front, but in most cases from either flank as well. Unless therefore the ground covers the movement in a great degree it should not be attempted.

In addition to the above primary modes of attack, a TURNING MOVEMENT may also be considered. This might be looked upon as almost a form of flank attack were it not that it differs from it in some essential particulars. The turning movement is more often a menace than an attack, for it threatens the enemy's line of retreat so as to force him to change front or shift his position before he enters into combat. The manœuvre differs also from a flank attack inasmuch as it removes the scene of combat from the position held by the enemy, while the flank attack takes place on one of the flanks of the position itself.

The turning movement may be made, either with a portion of the force at command, or with its whole strength.

In the *first case*, the conditions should render it improbable, if not impossible, that the enemy could act offensively in turn upon each fraction of the divided force. Otherwise the separate movement should not be attempted, as it must end in disaster.

When the ground permits, or is favourable, cavalry and horse-artillery, mounted infantry and galloping machine guns, are specially suited to the turning movement. These troops would therefore nearly always form a portion and sometimes the whole of the force employed on the service, both because they can by rapid advance produce the moral effect of surprise, and because they can more easily avoid destruction by a superior force.

The relative proportion of the force detached, in such case, upon the turning movement, to that retained for the frontal attack, can only be decided by the circumstances.

If the line of retreat of the assailants must necessarily be preserved in rear of the main body the latter must keep the

largest amount of force ; if the retreat can be made equally well to the flank, the strongest force may be detached for the turning movement.\*

It is evident that this mode of attack, by which a portion of the force is detached from the main body, is not generally suitable for minor operations ; there may be occasions, however, where a small force may with great advantage detach cavalry and mounted infantry, to threaten the adversary's communications.

In the *second case*, if the turning movement be made with the whole force at command, it is clear that the former line of retreat must be abandoned altogether, or else there should be such complete probability of success that the line may for the moment be laid open to the enemy, for the sake of concentrating the whole force in the attempt to turn his position.

#### PREPARATION FOR THE ATTACK.

The above general principles being clearly understood, the commander of a force of the three arms should have no difficulty in preparing his plan of attack and issuing his orders, upon receiving reports of the strength and dispositions of the enemy, and of the nature of the ground upon which he must act.

In ordinary cases when small forces are engaged, the cavalry reconnoiters in advance will bring in sufficient infor-

\* In either case it is very desirable that the detached commander should have considerable latitude afforded to him in the instructions he receives from the commander of the troops. These instructions should be to the effect that a certain result is to be, if possible, attained, and should also contain all information necessary to enable the detached force to act in general concert with the main body. But precise orders which may be rendered impossible of execution would only tend in all probability to mar the enterprise. To give such would be to fall into an error which has been freely laid to the charge of both English and French generals at various epochs. The Germans are said to be free from it. The Russian operations in Asia during the last war showed conspicuously, on different occasions, both the fault and the avoidance of it.



mation for the purpose ; but if the enemy should be covered by advanced troops, it may be necessary to make a special reconnoissance, sometimes supported by guns, in order to arrive at a knowledge of his strength and intentions.

With a moderately large force this would probably be carried out by the advanced-guard, the field-battery of which would take up what may be called a *preliminary artillery position*, and open fire at long range to cover the advance of the troops employed in the reconnoissance.

The information required being obtained, the commander would issue his orders. In the case of very small operations or of a sudden rencontre with the enemy these would be given verbally ; under other conditions orders should, if possible, be written.

Should the force, as it probably would, consist of detachments under various commanders, it would be necessary that there should be a *general order* for all, and also a *special order* addressed to each commander where separate action is required.

The general order should be clear, precise, and complete, and as short as strict compliance with these requirements will permit. It should contain :

1. The conditions or circumstances of the intended action, with what is known of the enemy ;

2. The mode of action determined upon and how to be undertaken ; thus, for instance, to attack the enemy when he is touched on in direct advance, or, to attack the whole, or a certain named part, of a position ;

3. The strength, composition, and general division of the attacking force, with names of commanders ; this may be given more in detail in the margin of the order if thought necessary ;

4. The preliminary positions to be taken up by each distinct part of the force with their directions of attack ;

5. The hours at which these positions are to be assumed, and at which the forward movement or attack is to be commenced ;

6. The position where the commander of the troops will

be found during the action, to which all references or reports are to be made or sent.

- These clauses would be sufficient for a small force, but, in operations of greater magnitude, it would be necessary to add :

7. The positions of the ambulance and field hospitals, and the order of march of the trains of the various columns.

• It must be understood that the dispositions of the troops thus indicated are only intended for the first phases of the engagement, for until the enemy's counter-plans are developed the final movements which depend thereon cannot be defined.

The special orders addressed to separate commanders should contain nothing that may tie their hands too much in matters of detail. As a rule they should be told the thing to do, not the manner of doing it, and within certain safe limits, to be named, they should be allowed free action.\*

In apportioning the reserves for the different arms the commander of a combined force may accept the following as a main principle, modifying its application according to the special conditions of the case. The various arms require reserves in exact proportion to their respective liability to fall into confusion during action. Therefore a reserve is most necessary for cavalry, next for infantry especially when attacking, and hardly at all for artillery which has no shock action. But although a reserve of guns may not be required, the artillery should certainly have reserves of men, horses, and ammunition. With such aid the guns can be withdrawn from action in one part of the field, and sent rapidly to another as required.

During the progress of the earlier arrangements for the engagement, the reconnaissance of the enemy and ground would be kept up by the cavalry, whose preliminary reports have enabled the commander to decide upon his first course of action. Great care should be taken that there is

\* *Vide note ante*, p. 311.

no confusion in forwarding the reports of the patrols, and that their leaders clearly understand where they are to send them.\* The position of the commander of the troops, as mentioned in the 'orders,' should therefore be impressed upon each patrol leader, whose duty it will be to see that every man sent back with a message distinctly understands where he is to deliver it.

In carrying out the preliminary action to cover the reconnaissance, the advanced-guard does its best to cause the enemy's advanced troops to retire. When, however, it finds itself definitely checked, the advanced-guard must look for support from the main body. The artillery is the first up, and either joins the battery of the advanced-guard, or taking a position abreast of it, acts in combination, and opens fire in concert with the advanced-guard guns at the enemy. This *preliminary position* is sometimes known as the *reconnoitring position* of the artillery. Its object is by a heavier fire than could be afforded by the guns of the advanced-guard alone, to assist the latter to drive in all outlying troops or advanced posts of the enemy. Both mounted infantry and machine guns, when available, can be made use of in these operations, for which they are well suited.

By the time the enemy's advanced troops have been driven back, the further dispositions for the infantry main attack have also probably been completed; the reconnoitring position would now be abandoned, and the guns moved on to the *first principal artillery position*. In its selection it must be remembered that the first part of the engagement has for its object the more complete discovery of the enemy's plans and strength, as well as to cause him as much loss as possible from the moment he can be brought under fire. The guns, accompanied by the necessary supports, should therefore be pushed well to the front, and come into action at a point selected with due regard to the direction of infantry attack, so far as known at the time, and at a range of from 1,800 to 1,300 yards from the enemy's general position. The place

\* Form of report given p. 170.

chosen ought not to be such that the advance of the attacking infantry will soon mask the fire of the guns ; if centrally placed they will be protected by the troops on either side, if on a flank they need only be escorted by cavalry or by a small force of infantry on the exposed flank. The especial danger to be feared would be the unobserved approach of the enemy's skirmishers or marksmen within effective range.

In the case of large forces, the guns would probably be massed in one or two strong batteries. No reserves need be kept back under ordinary conditions, but all the available guns, deducting any required for a flanking movement, should be quickly brought into simultaneous action.

The object being to cover the advance and deployment of the infantry, and to draw the fire of opposing batteries, it follows that a sort of artillery duel will open the engagement and continue it throughout the Preparation phase, until the attacking infantry come up to effective rifle range of the enemy's position.

During this fire of the artillery the tactics of the infantry, with a view to forcing the enemy to show his dispositions clearly, would be directed to covering much ground with as few men as possible in extended order, the main bulk of the force being kept in small columns. If there are important points in advance of the position, which it appears desirable to possess, they must come under the early fire both of artillery and infantry.

If any high ground, in the course of the advance, comes within reach, from which the enemy's dispositions can be seen, it should be immediately occupied by the assailants, even though not in the direct line of attack. In default of high ground, which is not always to be found, a church tower, a high-roofed house, or even a tree, may be turned into a post of observation, by an intelligent officer.

So far the original dispositions for attack may be probably followed without much deviation ; but once the action can be said to have commenced, circumstances often compel the commander of the troops to change his operations.

For the purpose of watching the phases of the combat, the

position which the commander should assume during the engagement ought if possible to be on an eminence, from whence he can perceive the principal portion of the ground over which the troops are to work.

He should not quit this post (duly announced in the 'orders') without exceptionally good reasons, and if he is obliged to do so, an officer should be left behind to direct all reports or messengers to the new station of the commander. These injunctions are of much importance, as nothing can be more demoralizing, during an engagement, than to see officers and orderlies galloping about wildly to look for the commander and asking every one where he is to be found.

When the extent of ground to be passed over by the troops is great, it is often difficult to find a suitable position, whence the commander can observe the enemy's front line, and yet be not too far advanced to lose the immediate direction and control over the reserves, which it is so important he should keep in his own hands. If no place can be selected meeting all requirements, the commander must post himself at the most central and important, and detach two or more officers, in whom confidence can be placed, to other parts of the field, with directions to keep him constantly informed of what is passing. Sometimes it may be necessary to provide for a change of the position of the commander during the action, in which case it should be notified that he will start from a certain spot on a central route, and advance along it from time to time. Some one must, however, always be left at the first position or starting point to direct inquirers or messengers.

The orders which are necessarily transmitted during an action by the commander of the troops, are of much importance, and should be given with great care. They should, if possible, be in general harmony with the original plan of attack, although certain modifications may become necessary. They should not descend to details which are better left to commanders of corps, nor should the commander of the troops interfere in the execution of his orders, further than to assure himself that they are carried out. He should be satisfied on

this point by means of constant reports and communications which must be kept up, without interruption during the action, between him and the commanders of separate corps and detachments. When the reports cannot be sent by an officer, they should be written, and in such case numbered and dated with the exact hour and minute of despatch. Above all other matters it is most important that the commander of the troops should be immediately informed, when circumstances render it impossible for a subordinate commander to carry out his orders or instructions, as the failure to execute these may necessitate modifications and fresh orders to replace the former ones.

By the end of this phase of the attack it may be presumed that the enemy has been forced to show his hand sufficiently for the purposes required of determining the best method of finally attacking him, and the commander's main dispositions are either directed to be carried out in their original design or else modified to suit new ascertained conditions.

#### DELIVERY OF THE ATTACK.

The infantry of the First Line, although not yet so far committed that they cannot be disengaged, or their direction of attack diverted, may now be assumed to have reached the zone of effective rifle fire, about half a mile from the enemy's main position. They continue their advance and presently open fire on the points of attack, their firing line being strengthened as required by its supports. The local reserves of the First Line are at such distance that they can either reinforce the original line of attack when necessary, or else be brought up rapidly in front to support a change of direction, should the best point of attack be only now developed.

The artillery, which up to this time has continued from its first position to support the general advance, by endeavouring to silence the enemy's guns and to draw off his fire from the infantry, is now directed to concentrate its fire upon the intended points of attack in order to prepare the way for the infantry assault. The moral effect of this fire upon the defenders will probably be very great, even if the

physical effect upon troops partly behind cover of ground and obstacles be comparatively trifling.

The Second and Third Lines of infantry follow the First Line in its advance, and gradually reduce their distance from it.

Whenever the ground will admit, the leading infantry are supported on the flanks by cavalry, which advances under cover in small columns, with strong supports close at hand, losing no opportunity of attacking any advanced troops of the enemy and warding off adverse cavalry attacks in return. The very fact of the cavalry showing itself on the flanks, gives confidence to the attacking infantry, and demoralizes the defenders, especially if they are themselves deficient or weak in that arm.

The infantry may now be said to be finally launched at the selected points of attack, and from this time plays the principal part. It is fairly committed to the fight, and having received its last impulse in the desired direction from the commander of the force, no power can alter or recall it for good, during the remainder of the engagement. Its development of fire-action should rapidly increase as it nears the point of attack, for upon its weight of fire depends its success.

The cavalry on the flanks must be on the watch, not only to protect the infantry flanks of its own troops extended in the advance, but also to seize opportunities of approaching unseen the flanks of the opposing infantry or artillery, and of throwing them into disorder or demoralizing them, if not inflicting serious injury. If repulsed and in its turn disordered, it must rally under the protection of the other arms, and again return to exercise similar functions. But cavalry at this stage can only play a minor part, unless the ground be more than usually favourable to its action; with the exception, therefore, of strong supports to the cavalry acting on the flanks, the remainder of this arm would still be kept in reserve, but not so far to the rear that it could not be brought up quickly, if required to make a diversion or demonstration on either flank.

The artillery, which, during the early action, has been of first importance on account of its long range, now falls into the second place. The circumstances of the case must determine, whether it shall keep up its fire on the enemy's guns to relieve its own infantry, or whether it shall fire on the enemy's troops. As the rule to be followed, is, that it shall fire on that arm of the enemy which is for the time the most important, the enemy's infantry will, in all probability, be now the objective. In either case, a moment may arrive when a second position more in advance is necessary for the guns on account of their fire becoming masked\* by their own advancing infantry. If a portion or the whole of the guns can, in such case, be advanced rapidly and placed in a good position (especially on a flank, whence they can add their own fire to that of the advancing troops, which are at the moment absorbing the whole attention of the defending infantry), the proximity to the enemy's line, of this *second principal artillery position*, must not be too much limited by ordinary rules of caution.† When the attack and defence are nearly matched, it is clear that the addition of a close artillery fire on either side may turn the scale, and compensate by decisive success for any

\* When infantry is so placed as to be seriously endangered by the projectiles of its own artillery, if the latter continues its fire against the enemy, the infantry is said to 'mask' the guns. This may happen under various circumstances of range and ground.

† In naming the above the *preliminary*, *first principal* and *second principal* artillery positions, the writer has followed the German Major Hoffbauer, to whose valuable work on the tactics of field-artillery the student desirous of further information is referred. This writer places the limit of proximity to the enemy's line for the second principal position of the artillery at about 700 yards. He quotes many instances from the Franco-German War to show that positions between 1,000 and 700 yards from the enemy may be taken up at this stage by guns, if not without serious loss, at all events with such attendant success as to justify the action taken. As regards the *preliminary* (or *reconnoitring*) position it may sometimes be altogether omitted. The conditions of the action may be such, that the advanced guard guns take post at once on ground which serves for the *first principal* position. In this case the artillery of the main body as it comes to the front forms upon the advanced-guard battery, on whichever flank appears best.



loss sustained. As this close action of guns may in case of repulse lead to confusion, it would perhaps be advisable that the whole of the available artillery should not take up this second advanced position, but that a portion be held in reserve, massed in a favourable position, and kept in action all the time in support of the advanced battery.

During this period of the fight such portions of the reserves of the other arms are brought up as are required, and any concerted flank attack is carried out along with the frontal movement.

The culminating point of the phase of the attack now being described is the assault of the position ; this is generally either a success or a complete defeat.

The leading infantry having arrived within short range of the chosen points of attack, the firing line is finally reinforced by its reserves, and rapid fire is commenced. It is now that magazine fire will be used on both sides. The massed fire of the artillery is directed in active support of the attacking infantry ; and last, not least, machine guns, so long as they can avoid being put out of action by the artillery fire of the defence, pour in showers of lead upon the defending troops.

In great actions, a decisive blow might at this time, under favouring conditions, be given by the reserve cavalry, but in smaller affairs such as we are at present considering, this force would not come into play until the moment of pursuit or retreat.

The Second and Third Lines come up, and the former leads the way to assault, closely accompanied by the First Line, and backed up when requisite at decisive points by portions of the Third Line. The fatal error of allowing the men in front to be beaten back before reinforcement arrives should be guarded against, and troops should be pushed on in rapid succession to carry out the forward movement, and to replace the enormous losses attendant in modern warfare upon a frontal assault ; above all things, to keep up the *morale* of the attacking troops, by preventing a decided check in the advance at this critical moment.

## REFORMATION ON SUCCESS, OR RETIREMENT ON REPULSE.

If the attack is successful and the enemy retires, either before the demoralizing influence of the last steady advance, or broken by actual assault, the position he occupied is quickly assumed by the artillery and a heavy fire brought to bear on the retreating troops.

The reserve cavalry, which by this time has all been brought up from the rear, and probably posted on the weaker flank, is now launched in pursuit accompanied by horse-artillery, the superior mobility of both rendering their use peculiarly well suited to this service. Mounted infantry and machine guns might act with this pursuing force.

The commander of the troops would move forward from his station, and take his post upon the position lately occupied by the enemy, for further direction of the movements.

The infantry meantime would recover from its first confusion, re-form its ranks broken by the assault, and then furnish from its freshest troops, in all probability the Third Line, a force to aid in the pursuit.

The field-batteries will also push forward and harass the enemy with their fire, when he gets out of range of the position or becomes masked in his retreat by the interposing troops in pursuit.

If, on the other hand, the final assault of the position has been unsuccessful, the attacking force must retire, covered, in open ground, by the cavalry and artillery, in close ground by the least disorganized portion of the infantry supported by artillery. The latter arm now plays an important part. It must run every risk to enable the retreat to be safely effected, until a rear-guard can be organized to protect the movement. With this view, the first position where a stand can be made close to the field of action must be taken up by the Third Line of infantry, and the guns must be posted in such manner as not only to support the infantry, but further, to cover all the necessary dispositions for conducting the retreat in good order.

## THE THREE ARMS IN DEFENCE.

Should the commander of a force of the three arms decide to stand on the defensive, he should take up the position most suitable for his purpose without delay, as the superiority to be attained by this course of action must result in great measure from the advantages attendant upon choice of ground.

Without entering, beyond our limits, upon the many requirements of a good position, we may say that it should be such, from a tactical point of view, that the different arms could be disposed for defence in the manner most suitable to their action, and that there should be facilities for concealing their strength, composition, and posts from the view of the enemy, and of preserving them more or less from his direct fire during the attack.

It is also of the very highest importance that the front of any position selected for defence should be clear for view and fire, as should also be the flanks unless they rest on impassable obstacles.

Whatever may be the natural strength of a position its value as a point of shelter for passive defence, or as a point of temporary resistance for active defence, depends much upon the number and quality of the troops which are to defend it. The extent of the position should not be disproportionate to the strength of the defenders, for, if too much ground is occupied, part or the whole of the front must be weak, and if too little ground is occupied, the troops, being crowded, suffer greater loss under fire, while facility of manœuvring is impeded.

By a rough rule it may be calculated that for each yard of front to be defended five men will be required, including all arms and reserves.

The commander of the troops may thus in practice determine approximately what extent of position he should occupy, by knowing the strength of his force. If the position which appears to him the best to hold, is not unsuited for

this strength, he may occupy its full extent. If his force would thus be too much scattered, he must restrict the length of his line, defending only that portion of the position which presents the greatest natural advantages of ground, and which therefore, by its possession, will best enable him to carry out the purpose of his defensive action.

#### CONDUCT OF THE DEFENCE.

##### FIRST STAGE.

Should the force be large and covered by advanced troops, the preliminary proceedings will probably involve an affair of outposts, from which the commander will be enabled to judge of the force and intentions of the enemy. In minor operations his front would also be covered by small reconnoitring parties, from whose reports he would arrive at the conclusions necessary for arranging the defence. When the enemy is reported to be advancing, the commander, should the ground admit of it, and render such action safe, might employ part of his artillery in an advanced position, in order to cover the reconnaissance and enable it to be more active and daring, and to check the enemy's attempts to reconnoitre the position. In carrying this out the guns would act much as in the preliminary operations of the attack, and would in a similar manner be assisted by cavalry, and if possible also by mounted infantry and machine guns. When these troops have to retire it would usually be by a flank, and under cover of the fire of the guns of the main position so far as already placed.

During the early part of this stage the commander would no doubt be able to complete his preliminary plans for defence, and would issue his orders thereon much in the same manner as if for attack. The mode of operations indicated in the second clause of the orders \* would probably be, in this case, to await the enemy in a certain position and there to engage him with such and such intentions. In

\* P. 312.

the fourth clause, the points to be defensively occupied by each fraction of the force would be detailed, and also the relative positions of each portion of the reserves.

The first stage of the defence which has commenced with the reconnaissance of the enemy, would thus comprise the selection and occupation of the position by the defenders, as well as the advanced action, if any, of the artillery and mounted troops, already alluded to.

Upon the selection of the ground most suitable for the artillery of the main position, will in great measure depend the exact trace of the shooting line for the infantry, and there is some difficulty in approaching this part of our subject in detail, the position for the guns so much depending upon the circumstances of each case, and more especially upon the configuration of the ground.

The guns of the position should, however, if possible, be so placed, as to bring the enemy's columns under fire at long range, and hence they ought to command every distant approach. They should also be able to pour a concentrated fire upon the probable positions which will be assumed by the attacking artillery, and be stationed so as to sweep the ground in front of the position from the earliest to the latest moment of attack. The defence of the flanks in the case of large forces must be specially provided for.

It would therefore appear, that, unless the ground is peculiarly favourable for posting of guns in flanking positions, where without being exposed to enfilade they can bring a cross fire to bear upon the main attack, and a flanking one to protect the immediate front, the required conditions can only be fulfilled by the guns of a small force being placed somewhere in the centre of the front line, and preferably at a salient, should an irregular contour mark the front of the position. In the case of a larger force there might be a strong central battery, and a weaker one towards either flank.

The general distribution of the infantry would be in three lines. The First, or Line of defence, is divided into three parts, a firing line, supports, and reserves; the Second

and Third Lines are held back either for reserve purposes, or for offensive as well as defensive tactics.

If time for hasty fortification is permitted, some sort of entrenchment should be always prepared for the batteries, as even a low parapet of earth gives protection to the gunners. Great care should, however, be taken that the newly broken earth is concealed or covered in such manner from the enemy's view, that it shall not serve, as it has often fatally done, as a mark for their artillery more distinct than would otherwise be presented by the guns alone.

Shelter-trenches may also be prepared for the infantry in the shooting and supporting lines, as detailed in the notes upon the company of infantry in defence.

Neither the places prepared for the batteries nor the shelter-trenches should be occupied by guns or troops till the proper moment for action arrives.

In making these arrangements, it is of the utmost importance, to secure the artillery of the main position against the fire of the enemy's advanced skirmishers or marksmen ; and, with this view, the batteries ought to be covered in their immediate front by a line of extended riflemen, placed either in trenches or pits or behind natural cover, at a distance of from 400 to 500 yards in advance of the guns which they defend. If the battery is on a flank, this protection should also be extended for a similar distance to the flank. The infantry thus posted would remain as long as possible in position, and only retire when they are driven back by the overwhelming advance of the assailants. Besides their principal function, of keeping off the enemy's skirmishers from too early approach to the batteries of the defence, these advanced infantry could often bring an irritating fire to bear upon the attacking artillery at its first principal position, and perhaps serve to prevent the guns from approaching to the most telling ranges. This possible action would of course depend much upon the features of the ground. Sometimes the protecting duty of the infantry in advance of the defenders' batteries would be rendered unnecessary, by one or more advanced posts being held in front of the position.

These posts would usually be within half a mile of the Line of defence, and should command all ground in their neighbourhood which cannot be seen from the main position.

The general trace of the position having been sketched out, the entrenchments, if any, executed, and all dispositions completed, the troops would be held back under cover, in such order as to be readily moved up to their posts at the proper moment. The artillery would first take post, but not too soon. No advantage can be gained by the guns of the main position opening fire upon small and scattered advanced detachments of the enemy, and the position of the batteries of the defence would be thereby prematurely disclosed to no purpose. When the heads of the enemy's columns can be discerned and are within range, so that they can be forced to deploy by fire being opened upon them, the guns may move into position. But if the advancing infantry are covered in their preliminary movements, the guns of the main position should not be brought up, till the attacking artillery deploys at its first principal position, and offers a fair target.

The infantry, with the exception of the skirmishers in front of the guns, or detachments holding advanced posts, should be kept still longer under cover in rear of the position. They can do no good at this juncture in the front line, and their moral tone will be much better preserved by their being saved from the first effects of the assailants' artillery fire.

When the artillery has occupied the main positions for guns (in the case of small forces there would probably be only one such position), there would still, should the strength of this arm allow of it, be kept in hand the artillery of reserve, which would represent what in an army is called the Corps artillery, as distinguished from the Divisional artillery attached to infantry divisions. The word 'reserve' is, however, only used for want of a better, as these guns, so far from being held solely in reserve, are liable, under the conditions of modern artillery tactics, to be employed from the earliest stages of the conflict. The reserve guns should only be kept separate, in order to be ready to meet any sudden emergency of the action, to oppose surprise

on the part of the enemy, or to support offensive returns on the part of the defenders.

It is impossible to lay down any rule for the exact position of the artillery of reserve. The guns should, however, be well up to the front, so as to lose no advantage of range from the commencement of their fire. A position in rear which entails, not only a sacrifice of some hundreds of yards, range, but the necessity of firing over the heads of the defending infantry, greatly to their discomfort and demoralization, does not appear to present commensurate advantages of safety to the guns. It is evident that artillery so placed would be comparatively useless during the later stages of the defence, when once the attacking infantry has advanced so close that the fire of the retired batteries would be masked by the ground, or by the defending infantry lining the position.

Guns so placed might be useful in defending an inner line, or for supporting a counter-stroke delivered inside the position after the assault has been made, but their action would be lost almost altogether during the period immediately preceding the final attack of the position.

The previous knowledge of ranges and distances, possible to the artillery of the defence, presents a great advantage ; and there ought to be no difficulty in their noting the distances of all prominent objects in front, by range-finders or other means. If, however, circumstances have not permitted the gunners to get this information during the preliminary arrangements, the earliest portion of the artillery action must be utilised to obtain correct estimates of the ranges to all important points, by the usual method of trial shots.

There are certain points or portions of all positions, the possession of which would assure the assailant the greatest tactical advantages. In many cases also the conformation of the ground appears to limit the movements of an enemy to certain lines of operation.

The defence should therefore occupy these parts of the position in force, with supports in close proximity, while still preserving the general line. Under the second condition,



the force should be prepared to resist advance by rapid reinforcement at any of the possible points of approach.

Most of the cavalry, and some horse-artillery if it can be spared, as also mounted infantry and machine guns, would be placed near the Third Line. This force is kept in hand by the commander of the troops, for the purpose of joining the Third Line in forward movements and flank attacks upon the assailants, or of covering the retreat of the troops engaged in these counter-attacks if unsuccessful.

#### SECOND STAGE.

We have seen that fire at long range is opened by the main batteries of the position, upon the heads of the enemy's columns, or upon the assailants' artillery when they take up their first fighting position. In either case the attacking artillery will at once, or as soon as it can take up its first position, reply therefrom, and as the artillery of the attack is now the most important arm it must be answered by the guns of the defence. In this artillery duel the defenders have the advantage already pointed out, of knowing accurately the ranges to the various points which must be occupied by the enemy in his advance, and also of being entrenched while the assailants are comparatively exposed.

The defenders' guns continue the artillery duel with as much effect as possible, until they see that the attacking infantry has passed the first fighting position of its guns, and is pushing into the 2nd zone. From this time the guns of the defence are directed upon the attacking infantry, as this arm has become of paramount importance.

The advanced posts may now soon be expected to be forced back, upon which the infantry of the First Line of defence should be ordered into position, having been kept back under cover till this moment. The firing line may fire half-company or section volleys to cover the withdrawal of the advanced posts; and machine guns hitherto safe under cover may now be brought up and placed on the flanks of the firing line, or in the intervals between battalions, and afford effective aid in this operation.

•As the attacking infantry advances through the 2nd zone opportunities of employing long-range fire will be offered to the defenders, as they will know the exact ranges to conspicuous objects, and they can also improvise rests for the rifles. As casualties occur in their firing line, reinforcements must immediately fill up the gaps from the supporting line, as it is a matter of the first importance that the firing line be always kept up to its maximum strength.

#### THIRD STAGE.

By the time the attacking force has entered the limits of the 3rd zone, it has forced the defence to show more clearly the positions of its troops, and the enemy commences his dispositions for the real attack, the direction of which it is now the object of the defending commander to discover, by every means in his power. As the supports and reserves of the assailing infantry come clearly into view, they should receive the concentrated fire of part of the artillery of the defence. Volleys may also be directed from the firing line upon them.

The real points menaced by the attack are soon made clearly apparent; the commander reinforces them to meet the assailants with a superior infantry fire, and the artillery of the defence is now all directed at the infantry firing line, which the assailants have reinforced, and which has become more powerful. The Second Line is brought nearer to the First Line of defence, to resist the enemy at the points of attack.

Should a counter-attack be projected it takes place during this stage, unless it is to be delayed until after the assault, as shown in a former page. Resistance to a flank movement of the attacking troops would also now have to be made, to meet which a special reserve is sometimes held in hand, or else a portion of the Second or Third Lines are employed. In the case of a counter-stroke being delivered by the defence, it would usually be made by the Third Line, and part of the cavalry and horse-artillery might be employed in support of it. Cavalry also should generally move forward

on the flanks at this part of the action to seek for opportunities of throwing the flanks of the attacking infantry into disorder, or of taking guns too rashly advanced.

If the assailants are not beaten back by the steady fire of the defenders, and reach assaulting distance from the position, the First Line of defence prepares for a final effort, and being fully reinforced by its reserves, commences independent fire. The machine guns join, and every gun of the batteries also is served as rapidly as possible, case shot and reversed shrapnel being used. If the infantry have magazine attachments to their rifles, this is the moment at which they should be utilised by the defenders to add to the intensity of their fire.

Should the enemy prepare to charge, the Second Line of the defence fixes bayonets and moves up to the firing line to resist the assault.

The result of these operations is either the final repulse of the attack upon the position, or the defenders' enforced retreat therefrom. In either case pursuit by the victors may ensue. Should the assailants retire the guns of the position must continue to fire upon them, until masked by the interposing troops sent forward in pursuit.

Should the defenders, on the other hand, be forced to fall back, guns must cover the movement and enable the infantry to disengage itself. The Third Line is usually available to enable the First and Second Lines to withdraw. In an open country the cavalry of the defence (the reserve of that arm being probably quite fresh) would, together with horse-artillery, aid in checking the pursuit; in a close country the service would be undertaken by infantry and artillery; in a varied country the duty would be shared by all three arms.

#### THE ATTACK AND DEFENCE OF LOCALITIES.\*

In the foregoing notes the action of a small combined force in attack and defence of an ordinary position has been

\* The space at disposal has necessitated brief notes only being given on the subject of attack and defence of localities. The author has, however, the less hesitation in curtailing its discussion in this

alone discussed. In minor operations, however, a small force is more often engaged in the attack and defence of special localities or posts. The primary principles of action already detailed and explained are also applicable in such cases, but some modification in their mode of execution is now and again required to meet the special conditions of local combat.

The attack and defence of points possessing tactical importance has been always more or less a feature of warfare ; but the frequency of such action, more particularly on the field of battle, before or during the progress of an engagement, has much increased in modern wars. This has probably arisen, from the fact of the theatre of action being more and more unfrequently selected in open and sparsely populated countries ; the rapid increase of cultivation and constant subdivision of property, on the continent of Europe especially, having tended to render battles on plains or open hills of somewhat rare occurrence. It has therefore been rather the rule than the exception, in modern campaigns, to find the tactical occupation of hamlets, farm-houses, woods, isolated hills, or even the smallest accident of ground, eagerly sought for and as eagerly opposed, until each point has become the scene of a miniature battle, in all its various phases.

Points such as these when presented on the battle-field itself are of immense use to the defender, forming advanced posts for preliminary resistance, or rallying posts for final stubborn defence, according to their position. The possession of such a point may often assure success to the side which can hold it, and where small forces only are engaged it would probably become the main objective in attack.

The action of a force detached from the main army whether in attack or defence is also commonly connected with the seizing or holding a similar post.

manual, as the student may already find sufficient information thereon in other English works. See especially *Field Works*, the seventh volume of this series, by Major General C. B. Brackenbury, R.A., in which the attack and defence of special posts is exhaustively treated.

The special modes of approach or resistance must vary with the nature of the locality attacked or defended, but as a rule infantry combined with artillery would form the force employed in local combats of this nature. The best formation for infantry *attack* would probably be in small columns at considerable intervals, which could profit by the ground, and advance without extending close up to the point of attack. This point itself would be chiefly selected for the advantages thus presented of an easy approach masked by the ground. The leading supports should be close to the front, for though the moral effect of reinforcements coming up in succession is always very great, the demoralizing influence of the first attack on a post being repulsed, through weakness of the leading troops, would be very much greater.

The artillery would, as in the attack of a position, first prepare the way for the infantry at long range, and then if possible move up to telling distance to co-operate in the final assault.

When the post to be assailed is some distance off, and the attack is to partake of the nature of a surprise, the force might be composed of cavalry and horse-artillery, with mounted infantry and machine guns. Such an attacking force would possess great mobility, and also considerable offensive power.

In arranging the *defence*, strong points, which the enemy cannot pass without taking, must be looked for. These should be occupied by the defenders, and the enemy forced to local attack thereon, by strong reserves so posted as to prevent a turning movement.

The defenders should pay earnest attention to the general principle of commanding all approaches by a possible concentration of fire, whether that of artillery, or of infantry, or of both. Should the defence to be made be a determined one, an inner line or citadel should be fixed upon or formed for final resistance.

Guns as a rule must not be shut up in any enclosure from which they cannot be easily withdrawn. They should rather be on the flanks with local temporary protection, and cross

their fire in front of the post. Occasionally, however, an isolated post has to be held to the last, in which case the guns might be placed inside the enceinte and stand or fall with the place.

Under ordinary conditions, as in larger operations, the defenders should seize upon any opportunity for making a counter-attack, and for assuming the offensive at a favourable moment.

## EXERCISE XIII.

## THE THREE ARMS COMBINED.

## ENGAGEMENT OF TWO SMALL FORCES.

## IDEA.\*

Two opposing forces, one (Red) from Retford, and one (Blue) from Compton, are sent to occupy Minton.

Red's force consists of :

|                                       | Men.  |
|---------------------------------------|-------|
| One and a half battalions of infantry | 1,200 |
| One troop of cavalry                  | 48    |
| Six guns—12 pounders.                 |       |

The force is descending into Minton from the high ground east of the river, the advanced-guard having passed through the town as far as Heath Hill.

Blue's force consists of :

|                                       | Men.  |
|---------------------------------------|-------|
| One and a half battalions of infantry | 1,200 |
| One squadron of cavalry               | 96    |
| Six guns—12 pounders.                 |       |

The force is in motion on the Compton-Pawley Road, its advanced-guard being about a quarter of a mile west of Pawley House.

FIRST STAGE : 8 A.M. to 8.25 A.M.

*Red.*—The cavalry scouts of the advanced-guard are at Drayton Hill, with flanking groups on Wiley and Yatton Hills.

The scouts report, 'Blue cavalry reconnoitring along the line

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

Churton-Pawley-Totley Bridge.' This information being transmitted to the rear, instructions are sent up to the advanced-guard commander to choose and occupy at once the position most suitable for the main body to take up on arrival, in order that it may cover the town of Minton. Heath Hill having been selected, the choice of ground is approved of by the commander of the force on his coming up with the main body. This takes place at 8.15 A.M., when the following dispositions are ordered to be made.

One company (that on advanced-guard duty) to move to the copse, close to where a bridge crosses the Mill Brook; a second company to occupy South End Farm and copse; and a third company to be placed in Kite Wood; thus forming three advanced posts.

The main line of defence to extend from the wood on the south-western slope of Heath Hill, along the western crest, to the small clump of trees near South End Farm.

The battery of artillery to occupy a central, or nearly central, position in this line, having a company of infantry on each flank. Part of each company to be in the firing line, and part in close support in rear of each flank of the line of defence.

Two other companies to be posted as local reserves to the firing line. One, on the left, to be placed between the two woods on the south slope of the hill; the other, on the right, behind the fence which runs from the south corner of Kite Wood towards Minton Wood.

The artillery commander, seeing that he may require to bring his guns to bear not only upon the immediate front of the position, but also upon the high ground to its right front, a probable point of attack, decides upon bringing his battery into action in echelon of subdivisions, the left in advance and the right retired. The guns, by a simple movement of the trails, can thus be traversed round, and brought to bear when necessary on Yatton Hill.

On account of the nature of the ground on the left flank of the position, an attack in that direction is not anticipated.

The remaining five companies of infantry are to be placed in Minton Wood. One of these is to be held as an additional reserve company, two companies as a Second Line, and the remainder as a Third Line.

Shelter-trenches of slight profile are now traced out for the two companies of the firing line, and their construction is at once



begun; the men not employed in working at them are made to lie down under cover in convenient positions in rear of their posts, until required to act.

The regimental small-arm ammunition carts and mules, are placed close to the reserve company at the edge of Minton Wood.

A few small patrols of cavalry are left on the ground about Wiley Hill to report any advance of the enemy on that flank, but the remainder of the troop is sent to Yatton Hill with orders to reconnoitre as far as Winsley Bridge, to look out sharply for the enemy in that quarter, and to resist if possible any attempt on his part at reconnaissance from Yatton Hill.

The orders for these preliminary arrangements are briefly issued by the commander of the force, who notifies that his own position will be upon Heath Hill itself during the coming engagement.

The working parties commence the shelter-trenches at 8.16 A.M., but have only been two or three minutes at work when artillery fire is opened upon them from the direction of Pawley House. The Red battery is immediately brought up to its assigned position to answer the fire of the enemy's guns.

The troop sent to Yatton Hill advances towards Stanton Bridge by the road passing South End Farm, and on nearing the opening on to Yatton Hill, not far from the bridge, information is received from the scouts that Blue cavalry is approaching. The troop wheels to the left off the road and pushes up the hill, forming into line as it gets on the open ground, but before the Red cavalry has time to get well into a gallop, it is charged by Blue cavalry coming down the slope in echelon of half-troops. The first shock breaks Red's ranks, and the second scatters the troop, which has to retire as it best may by the Stanton Bridge-Minton Road.

*Blue.*—On nearing Pawley the scouts of the advanced-guard send back information that 'the enemy's scouts are on Drayton Hill, and a column of the three arms is approaching Minton from the east.'

The cavalry of the advanced-guard pushes forward and, fresh reports being sent to the rear, the commander of the force is informed, first, that an advanced-guard is at Heath Hill, and shortly afterwards, that the main body of Red's force has also arrived and is taking up position on the hill, as if to cover Minton.

The battery is now ordered up to the front.

At 8.12 the troop of cavalry belonging to Blue's advanced-guard arrives on Drayton Hill, and its scouts are in contact with those of Red, both there and on Yatton Hill. The cavalry and infantry of Red's advanced-guard are seen on Heath Hill.

At 8.16 the battery arrives and is taken into the grounds of Pawley Park, where a preliminary artillery position, selected by one of the officers of the battery who has galloped on to the front for the purpose, is taken up. From the point where the guns are brought into action, Heath Hill is fairly visible over and between the trees at a range of about 2,000 yards, and with the aid of the glass working parties are seen entrenching on the western crest.

Fire is opened against Heath Hill at 8.19 A.M. and at the same time a look-out station is established on the roof of Pawley House.

The commander of the force now arrives at Pawley House, and having received a report of the enemy's strength and position, makes arrangements for the attack. He has already sent on the second troop of cavalry to Yatton Hill, with positive instructions to prevent reconnaissance by Red on that flank; assistance, if required, to be asked for. At the same time every possible information regarding Red's dispositions for defence is to be obtained and transmitted to the commander from this advanced position.

The company of infantry of the advanced-guard is ordered on arrival to take post in Drayton Wood, supported by the troop of cavalry already on Drayton Hill. When the attack commences, all the cavalry scouts who are out to the front and right flank, except a few on the south side of the Mill Brook, are to rejoin the troop. Three companies of infantry are also to follow to Drayton Hill. The whole of these four companies and the troop of cavalry to be under the command of a field officer.

With this force the commander proposes to hold and distract the enemy by a weak frontal attack; while the main portion of Blue pushes round along the river bank to assail the right flank of Red's position. Thus the flank attack will really be the main attack.

The orders for these movements are given without delay. The command of the frontal attack (four companies and one troop) is entrusted to Major A., while that of the flank attack (eight companies) is given to Major B., with Major C. as second

in command. The commander of the force notifies that during the action his own position will be on Yatton Hill.

The Blue guns are answered by those of Red after a few minutes' interval, but with less success; the position amongst the trees near Pawley House, taken up by the Blue battery, not presenting so clear a mark as the guns and the newly-turned earth of the trenches on Heath Hill.

The Blue troop sent forward on the left arrives at Yatton Wood at 8.15 A.M., and a few minutes later comes into contact with Red cavalry near Stanton Bridge as already shown. After repulsing Red, the Blue troop does not think it prudent to pursue, but re-forming under cover of the slopes of the ground near the river, continues to watch the various approaches from Minton and Heath Hill.

At 8.25 the company of the advanced-guard arrives on Drayton Hill. It is directed to enter the southern wood and establish itself at the eastern edge of it, opposite to the left of the enemy's position.

The order which has been sent to the companies of the flank attack to direct their march to the left, reaches them when a quarter of a mile west of Pawley House on the Compton Road. They immediately leave the main route, and march across the downs towards Magpie Wood, the western end of which is reached by the leading company at 8.25 A.M.

#### SECOND STAGE: 8.25 A.M. to 8.40 A.M.

*Red.*—The shelter-trenches continue to be made and the guns keep up a sort of duel with those at Pawley House. The latter, however, firing also at the working parties on Heath Hill, have already caused them some loss.

At 8.30 dust rising on the Pawley Road, just behind Drayton Wood, shows that troops are coming up in force, and the fire of the guns is directed thereon, evidently with some effect, for the Blue artillery leave their more distant position and come into action in a field lying north of Pawley Village at about 1,400 yards' range, with the apparent intention of silencing or drawing off the fire of the Red guns from the Blue infantry.

At the same hour infantry fire is opened by volleys upon the Red guns, from the near end of Drayton Wood, at a distance of 800 to 900 yards. The left company of the main line of defence is immediately brought up into position, although the shelter-

trenches are not more than half finished, and opens fire in reply upon the troops in Drayton Wood.

The Red company in the copse near the Mill Brook is prevented by the conformation of the ground from seeing or firing upon the Blue company in Drayton Wood, but on hearing the shots fired from the wood and replied to by their own scouts in front, a few men of the Red company in extended order are advanced up the slope of the hill, and succeed in drawing Blue's attention away from the guns for a short time. Their advanced position, however, is soon rendered untenable, owing to the severe fire which the company in the wood brings to bear upon the men.

The company of the defence on Heath Hill now establishes itself in advance of its shelter-trench, so as not to interfere with its construction, and replies with vigour to the fire from Drayton Wood, the range being about 750 yards.

At 8.35 an advance of Blue infantry is perceived between the north part of Drayton Wood and Drayton Farm, a frontal attack from Drayton Bottom being apparently designed. The movement, as soon as developed, is met by the fire of the advanced company in South End Copse, but not by fire from the main position until the Blue infantry extended across Drayton Bottom have arrived within 800 yards of Heath Hill. At this time, 8.40, the shelter-trenches are completed and the infantry of the main position enter them and bring their fire to bear upon the attacking force.

The commander now receives intelligence from the cavalry on his right flank, that all efforts to reconnoitre on Yatton Hill have been frustrated by the Blue cavalry. An order is instantly despatched to the company at Kite Wood to move to the plantation beyond the road to assist the cavalry in forcing their way on to the high ground. The company in reserve at Minton Wood is sent to take the place of that leaving Kite Wood.

*Blue.*—The company of the advanced-guard enters Drayton Wood, and taking post at its farther edge opens fire, as we have shown, upon Heath Hill.

At 8.30 the head of Major A.'s three remaining companies arrives near Pawley Wood, and the dust of the column apparently attracting the attention of Red's artillery, some shells are directed upon and take effect in the leading company.

Blue's battery of artillery now shifts its position to a care-

fully selected one between 1,400 and 1,500 yards from Heath Hill, in a field to the left of the Pawley Road, which is in effect the first artillery position of the attack. By this move of the Blue guns the fire of Red is soon diverted from the head of the infantry column.

The companies having arrived at Drayton Hill are drawn up for a few minutes' halt between Pawley and Drayton Wood before engaging in the frontal attack on Red's position. The advance is then commenced by one company moving cautiously along the road to Drayton Farm under cover of the fences, and extending two sections across the northern part of Drayton Bottom. This line is prolonged to its right by two sections of the next company, the remainder of each company following in support; the third company is kept in reserve.

As soon as the firing line of this force enters Drayton Bottom it comes under the effective fire of the Red company at South End Copse. Its progress is therefore made by rushes from one line of fence to the next. At the second fence the firing line opens fire at about 800 yards on the main position, the orders of this force being to engage, as soon as possible, the attention of the front line of defenders.

Full account of the dispositions of the defenders has now been forwarded by the Blue cavalry on the left flank to the commander, who has taken up his post on Yatton Hill near the road between Upper Wood and Yatton Wood.

The captain of the troop reports that, notwithstanding the repeated efforts of Red cavalry, he has so far succeeded in preventing any reconnaissance on the part of the enemy's scouts, and in keeping the main party of cavalry off Yatton Hill.

At 8.40 the flank march of Major B.'s companies has reached Yatton Wood, the leading company being between the north wood and the river. The route thus lying along the reverse slope of Yatton Hill and across downs where there is no dust to be raised, has so far escaped the direct notice of the defenders, whose attention, moreover, is engaged, as we have seen, with the frontal attack.

#### THIRD STAGE: 8.40 A.M. to 8.50 A.M.

*Red.*—The commander is not at all satisfied at the absence of intelligence from his right flank, and sends repeated orders to the officer in command of the troop to break through the cordon that Blue has established.

At 8.40 the company of infantry, advancing from Kite Wood, has passed through the plantation, and in combination with the Red troop, drives back the Blue cavalry. The Red troop now, following up across Yatton Hill, discovers the presence of the advancing companies of Blue's flank attack just behind Yatton Wood. Intelligence is instantly sent to the commander on Heath Hill, who receives the news at 8.48.

During the last few minutes, however, Blue's frontal attack has been so skilfully managed as to fully persuade Red that it is a real attack, and in order to meet it the Red commander has merged all his supports in the firing line, and also brought up his two reserve companies close to the front line of defence. On receiving news of the threatened flank attack, he sends orders to Minton Wood for the two companies of the Second Line to act as reserves, and to move up to Kite Wood. One of these enters the wood in support of the company extended at its farther border, the other takes position behind a bank on the left of the wood facing north-west.

The two last remaining companies, originally told off as a Third Line, are now posted as a Second Line on the higher ground south of Kite Wood, ready to resist the assault of the position on its right flank. The company which has pushed on in support of the cavalry falls back and makes a stand at the plantation, while the cavalry retreats on to the Minton Road.

At 8.50 Blue has driven the Red company out of the plantation, and threatens the right flank of the defenders' main position.

In the front of the position the Blue company on left of the firing line has reached the line of fence touching the west corner of South End Copse, and by bringing up part of the reserve company has taken the copse after a severe struggle. The Red company falls back on the clump of trees on the east side of the road.

At the moment that Blue commences his attack on South End Copse, the Red company in the copse on the Mill Brook sees an opportunity of taking the attacking force in flank. It advances accordingly from the copse across the foot of Drayton Hill. But the movement is not unobserved by the troop of Blue cavalry, which is watching the progress of the fight from its concealment on the south side of Drayton Wood. It advances at a gallop round the edge of the wood, and falls upon the Red company on the slope of the hill. This charge is followed up

by an advance of the Blue company from Drayton Wood. The Red company is forced to retire with great loss, on to the extreme left of the main position. Meanwhile the Blue company joins the frontal attack and prolongs its line to the right, taking post behind the second fence from the road which runs along the foot of Heath Hill.

*Blue.*—The companies of the frontal attack, in their advance as described, have suffered considerable loss, but nevertheless fulfil their mission, in engaging and holding the attention of the defenders. As, however, they are unsupported, they do not succeed in advancing beyond South End Copse on their left, and the second line of fence from the road which runs across Drayton Bottom on their centre and right.

The flank or real attack has so far progressed that by 8.50 Major B.'s force has gained the crest of the hill overlooking Kite Wood and South End Farms, part of two companies being extended in the front line, forming their own supports, and two companies in reserve. The remaining four companies under Major C. are close behind the plantation in column of companies; they are to act as a Second Line, or part as Second and part as Third Line, according as may be required. The troop of Blue cavalry is to the left rear near Stanton Bridge.

#### FOURTH STAGE: 8.50 to 9 A.M.

*Red.*—The attack on the right flank has now so developed itself, that there can no longer be any doubt of its being Blue's real attack. Red therefore directs his artillery to bring their fire to bear upon it, and the foresight of the artillery officer in placing his guns in echelon at the commencement, enables him to point them speedily in the new direction without change of position. Fire at 700 yards' range is accordingly soon opened upon the troops in and near the plantation. This new objective of the artillery, however, has an attendant disadvantage, as the fire has to be directed over the heads of the Red infantry, lining the north-west crest and fences of Heath Hill not more than 200 yards in advance of the guns. The infantry are on a lower contour, no doubt, and the trajectory must also be considered, so that the danger is more apparent than real; but still the passage of projectiles over the men's heads, fired from a point almost immediately in their rear, has a more or less demoralizing effect upon the defenders of the right flank.

The companies in reserve are by this time merged in the firing line of the original position on Heath Hill, which is now prolonged by the two advanced post companies driven back to either flank of the main position. These troops, six companies in all, are ordered to resist the frontal attack of Blue by every means in their power, lest some favourable opportunity for converting it into a real attack should be seized upon by the assailants.

The other companies, in and around Kite Wood, offer a fairly successful resistance to the flank attack, being much assisted by the cover afforded by the trees and fences. After some minutes, however, they suddenly find that Blue's battery has come into action in a new position on Drayton Hill, whence its fire enfilades the position held by Red's right wing, and even in places takes it in reverse.

*Blue.*—At the commencement of this stage the artillery fire of Blue, from the field near Pawley, is concentrated on the right flank of Red's position as the principal point of attack. A few minutes later, however, the commander, from his post near Upper Wood, sends to request the artillery commander to co-operate with the attack from Yatton Hill, by taking up an artillery position at closer range to enfilade the right flank of the defenders now thrown back.

The guns limber up, move off, and in a few minutes come again into action, on the slope of Drayton Hill, just in front of the gap between the two woods. In their passage to this point they have been completely screened from the enemy's view, having first passed through the village and then up behind the northern portion of the wood.

The battery opens fire at 8.58 against the right wing of Red's force, which, bent back in order to meet the flank attack, is thus taken in enfilade, and suffers considerably, both physically and morally.

Major B. now pushes his attack vigorously, and by the end of this stage has arrived at Kite Wood, passing through which he finally reinforces his firing line, and opens rapid fire on the right flank of the defenders' position. Major C. closing up receives orders to advance his four companies as a Second or assaulting Line. He accordingly fixes bayonets, and passing through the First Line, charges up the northern slope of Heath Hill, his men cheering loudly. The Red companies fall back before him, except the



companies kept in hand as a Second Line, which cross bayonets in a vain attempt to check Blue's impetuous assault.

#### FIFTH STAGE: 9 to 9.5 A.M.

*Red.*—The right wing, enfiladed by artillery fire on its left, and pressed by a superior force, eight companies against six, in its front, is forced to fall back on Minton Wood. The gunners are also suffering severely, from the fire of Blue infantry lining the fences in Drayton Bottom and on Yatton Hill above South End Farm.

The commander now determines to effect his retreat as he best may. Occupying the woods with infantry, his guns are ordered to cross the river as quickly as possible, passing round the south end of Minton Wood for that purpose. The troop of cavalry is to cover their passage over the bridge and then to follow them.

The guns limber up and retreat, and, taking up position on the farther bank, open fire on Blue to cover the withdrawal of the Red infantry.

*Blue.*—Red gives way first on the right and then on the left, before Blue's attacks. Red's troop of cavalry, falling back through Minton, is followed up by Blue's troop, which endeavours to drive it on to the bridge, in order to cut off the line of retreat for Red's guns. The Red troop, however, fighting desperately, holds the entrance to the town sufficiently long to enable the guns to get across. By that time part of the Red infantry, retiring through the town, forces the Blue cavalry to draw off.

Blue infantry presses in pursuit up to Minton and captures many prisoners, but a remnant of Red's force succeeds in crossing the river, and joins the artillery and cavalry on the east bank.

#### OBSERVATIONS.

Red from the first took up too extended a position, and frittered away his strength. Half-companies would have been better than whole ones at the three advanced posts, and the commander would then have had a stronger force in hand for disposal when Blue developed his real attack.

Red, moreover, allowed himself to be deceived by Blue's weak frontal attack, and committed half his whole force to oppose it





at too early a period, which resulted in his having only six companies in hand to meet the attack of eight companies, at the critical moment of the flank or real attack.

On the other hand, Red showed judgment in holding back his infantry from the trenches until their fire should be really effective, and also in the manner of posting his guns ; but for this, credit is rather due to the artillery officer who foresaw the probability of attack from the right, than to the commander, who, judging by the disposition of the rest of the force, does not appear to have altogether shared in that view.

The troop of Red cavalry should have been pushed forward earlier to establish itself on Yatton Hill, and when, on arriving late, it was taken unawares and driven in by Blue, the commander should have sent for, and obtained, help sooner than he did, rather than allow the main force to be deprived of proper intelligence from the most important flank.

Blue's flank march under cover was good, but it had the fault of slowness inevitable in such cases, and Red ought not only to have foreseen it, but to have been prepared to meet it with the larger portion of his force.

The final position of Blue's guns shows clearly that although in the last stages of an action infantry plays the most important part, yet the skilful handling of artillery may often help to turn the scale, and to secure a victory.

Looking at the relative positions of both forces at the outset, the nature of the ground, and the times of arrival thereon of the two opponents, an impartial judge could hardly fail to decide that, if properly handled, the Red troops ought to have been able to hold Heath Hill, and to have defeated Blue's attempt to occupy Minton.

## CHAPTER XII.

## REAR-GUARDS.

IN briefly alluding to the functions of a rear-guard in a former chapter, we stated that while in a forward march its duties are simply those of police, with sufficient strength perhaps to ward off desultory attacks on the baggage, in a retreat it becomes the most important section of the covering detachments of the army.

## THE REAR-GUARD IN A FORWARD MARCH.

As regards the rear-guard in its first aspect, Lord Wolseley, in his 'Soldier's Pocket-book,' truly remarks that no more disagreeable duty, involving sheer hard work without excitement or glory, can fall to the lot of officers and men. To wait about, sometimes for hours, after the head of the column has started, until the last of the impedimenta in rear has moved off, then to march all day in the dusty wake of the other troops, and to get into camp long after every one else has made himself more or less comfortable, are trials, petty though they be, which, even in peace manœuvres, make this duty unpopular.

On service when approaching the enemy the case is much worse; for the rear-guard is now, in addition to other discomforts, debarred from the chances of distinction and the excitement of action, enjoyed by its fortunate colleague the advanced-guard.

Like all other duties, however, it must, when it comes,

be met in a soldier-like spirit, and an officer, especially, is bound to make the best of it, as an example to his men.

#### THE REAR-GUARD IN RETREAT.

The circumstances are altered, however, when the rear-guard acts between its own troops and the enemy. A change of base or position may have caused an army temporarily to make a retrograde movement, or the force may be retreating. In either case the mission of the rear-guard is to retard the pursuit of the enemy, and to interpose between him and the main body on the march. In carrying out this duty the rear-guard must often maintain a struggle at a disadvantage, and even, if necessary, sacrifice itself in order to enable the main force to get away in safety. No more honourable post can be assigned to an officer than that of commanding or serving with a rear-guard in such a case. The very best officers and the freshest troops should be selected for this service, especially if covering the retreat of a beaten army.

In the latter case the position of the rear-guard is one of much difficulty, the enemy nearly always pursuing with activity, and also endeavouring by flank attacks to cut off the retreat. In considering the duties of a rear-guard, however, it must be understood that we do not mean to discuss the conditions under which the retreat of a beaten force from the field of battle should be covered, this being part of the final stage of an engagement, as shown in the last chapter. At such time the rear-guard proper has not yet been formed, nor, as is clearly pointed out by a German writer,\* can it ever be organized, or its duties really commence, until after the first pause which separates the combatants, at the conclusion of the action. From this point only we shall consider the rear-guard as a formed body.

As regards the strength of the rear-guard, we have seen that, in a retreat, it would take the same proportion of the covering detachments, which provide for the safety of the

\* Rustow.

army, as would be allotted to the advanced-guard in a forward march. This proportion would commonly be about one-sixth of the whole marching strength. In exceptional cases, as when protecting the rear of a beaten force against a pressing pursuit, it might amount to one-fourth or even one-third of the whole.

It is not without reluctance on the part of a commander that so large a rear-guard is detailed, as his first anxiety and care must naturally be to withdraw and place in safety the greatest possible number of his men. But if he neglects to cover his retreat by a sufficiently strong force the result will probably be that the rear-guard, unable to withstand the assaults of the enemy, will constantly be driven back upon the main column, and throw it into disorder. The demoralizing effect upon troops of the mere knowledge that they are in retreat is in itself very great. Should the rear-guard not be strong enough to enable the column to retire with due regularity, the feeling of depression will increase, the retreat will turn to a rout, and disaster will result.

A skilful rear-guard commander will endeavour by every means to obtain even small advantages over the enemy, in order to encourage his men and to maintain their *morale*, thus enabling them to endure with better spirit a harassing pursuit. With this view it appears desirable that the extreme rear and flanking detachments of the rear-guard should be sufficiently strong, to take all possible advantage of any imprudence on the part of the enemy's advanced troops.

In the event of a retreat after an engagement something may also be done towards this end, by selecting for the rear-guard such troops as have not only suffered least during the day, but have themselves perhaps obtained some local advantage, which, insufficient to affect the general result, may yet be enough to prevent the men feeling downhearted, and with little further stomach for action.

The rear-guard should follow and keep up constant connection with the main body upon the central route.

It is difficult to prescribe any definite distance for the

rear-guard to take up from the main body. The latter, as is natural in retreat, or in a strategic march to elude the enemy, proceeds as fast as is convenient in the desired direction. The rear-guard has to interpose between the main body and the enemy, to check the advance of the pursuer, and to observe and reconnoitre him, in order to discover at the earliest moment any intention, on his part, of a flank or turning movement. Hence it happens that the distance of the rear-guard from the main column, in two or more cases, may vary considerably, in accordance with circumstances : but under ordinary conditions the distances laid down for the advanced-guard in a forward march would be approximately suitable for the rear-guard in retreat.

A rear-guard does not require to reconnoitre in advance of its march, for the enemy cannot be there, and since the main column goes first over the ground, and investigates it thoroughly, reports and sketches of roads, bridges, and positions suitable for making a stand against the enemy, can be sent back to the rear-guard whenever it is likely to need them.

In most cases the enemy, if following, is easily reconnoitred in the rear, as in the eagerness of pursuit he has little heed for concealment.

On the flanks alone there is difficult and delicate work, of this particular nature, to be done. The most serious danger for a rear-guard is undoubtedly that of being turned or cut off, and not only is its own safety imperilled in such event, but its protective character as a guard to the rear of its own main column ceases to have effect. To be attacked upon its flanks is almost as dangerous as to be cut off, and against both of these contingencies the best precautionary measure is accurate and extensive reconnaissance to the flanks. The parties sent out upon this duty should in all possible cases be composed of cavalry.

As regards its order of march, a rear-guard has been fairly described as an advanced-guard reversed. The principles of formation are identical in both the one and the other, and the same rules generally guide both ; with this difference,



that the rear-guard retires before the enemy, while the advanced-guard pushes against him. Consequently, although the distribution is much the same as with the advanced-guard, the strength of the fractions of the rear-guard decreases instead of increases from front to rear.

The reserve is nearest the main body. The support is farther to the rear, so disposed as best to back up the rear party, which moves in several groups or in consolidated formations according to the country it passes over.

The extreme rear is brought up by the rear-group or point. The Germans call this group the *point* whether belonging to the advanced-guard or to the rear-guard. Connecting files are made use of between the several bodies as in the advanced-guard.

The general disposition would be, that the whole of the mounted troops, with their machine guns, protect the rear, either forming their own supports, or else supported by a small force of infantry. The artillery moves at the rear of the reserve and then the infantry still nearer to the main column. If the country allows of it, the reserve in a strong rear-guard may march with advantage in two parallel columns not too far apart.

The normal order of march of a small rear-guard of infantry and that of a similar force of cavalry are shown in Plate XXV., Figs. 1, 2 ; and the formations suitable for a large rear-guard in Plate XXVI.

The duties and positions of the officers are relatively much the same as with the advanced-guard ; but the most careful instructions should be given as to the degree of resistance to be offered to the enemy, and the extent to which reconnoitring on the flanks is to be carried in the retreat.

In a fairly open country, where the pursuit is not immediate, the extreme rear will be formed of cavalry in groups, moving in a line thrown back at each end towards the flankers, until it assumes the semicircular form in a manner more marked than it would in the advance. In a close country, every road, path, or possible point of passage in rear, inter-

secting a similar imaginary curve, must be committed to the charge of groups, whose scouts well in rear will give the earliest news of the approach of a pursuing force. This is shown in Plate XXV., Figs. 3, 4.

If the pursuit is active and attack imminent the rear-guard must manœuvre; and here we may remark that the nature of the country affects not only the composition of the rear-guard, but the kind of action it must take with the troops at its command.

As regards its composition we have said that the rear-guard should be selected from such troops as are in best trim and spirits. In an ordinary country all arms are necessary, but cavalry are specially required, not only for reconnaissance to the flanks, but to check the enemy's cavalry which is certain to follow in pursuit. Horse-artillery can act with the cavalry to great advantage in this service. Mounted infantry also, aided by machine guns, can be added, and will be extremely useful in delaying the enemy's advancing columns. But infantry is indispensable in more or less strength under all circumstances, in order to make a stand at suitable positions for defence, to form rallying points and protection for the cavalry if driven in, and to check the eager pursuit of the enemy's horse.

If the force then is of any magnitude, its rear-guard should be composed of the three arms, in proportions suited to the ground that is to be passed over. Cavalry, to meet and ward off the enemy's light horse and guns which in open ground can hover round the rear and flanks, artillery, to take up favourable positions in retreat to bear on the heads of pursuing columns, and infantry, to bear the brunt of the enemy's attack and retard his advance at the chosen points of resistance. If guns are used with skill in a retreat they can often save the deployment of their own infantry, by obliging the enemy, as he presses on in pursuit, to halt and deploy; the guns retreating rapidly as the enemy forms up. Artillery is thus of especial value when added to a rear-guard.

As regards the action of the rear-guard generally, since

the great object which it has to effect is to keep back the enemy without compromising the safety or delaying the retreat of the main body, it is evident that its duties can be best performed, by frequently occupying such natural positions as the country may afford, forcing the enemy not only to deploy but even to attack, and then getting safely away without serious fighting.

By continually offering to fight, and yet not fighting, but retiring, as soon as the challenge is accepted, the rear-guard delays the enemy without much loss, and also perhaps prepares the way for a successful offensive return, should the defective dispositions of the enemy, or his careless manner of pursuit, afford an opportunity.

But any attempt at the offensive must be made with care and judgment, for a rear-guard commander should never forget that he cannot stop long to fight, every moment that elapses bringing the foe assistance, while it separates the rear-guard from its friends. Even the temptation to pursue, in case of a temporary advantage, must be resisted, for such would result in too great an interval being left between the rear-guard and the main column ; the latter always continuing its march in retreat.

Although offensive action, then, may sometimes be desirable and even indispensable, for the purpose of covering the retreat if hardly pressed, it must on the whole be said that the rear-guard should, as a general rule, endeavour to avoid it.

If seriously committed to engagement, the troops of the rear-guard should only withdraw by alternate echelons.

In carrying out its duties, of delaying the enemy's advance by every possible expedient which may hinder and annoy him, it becomes necessary on occasion to break up the roads, and to blow up or destroy bridges, or render them temporarily impassable. Von Mirus suggests that it is a good plan to loosen the planks of a wooden bridge, so that the troops that cross last can easily remove them even in face of the enemy. Gates and narrow roads can be barricaded with carts, loaded with earth, stones, or manure, one wheel being removed from





each cart on putting them in position. Fords are rendered difficult to pass by placing farm implements, such as harrows, ploughs, &c., in the line of crossing. The longer the enemy can be kept under fire by means of such obstacles the better.

These are, however, but secondary expedients, and most reliance must be placed upon the advantage which the rear-guard derives from the natural features of the country traversed, in regard to their capability for defensive purposes.

If of equal strength with its pursuers, the rear-guard possesses a superiority over them in taking up a position of even small natural strength. If of less numbers it can still hold its own for a time.

Such positions as are formed by rivers, heights, and gullies are found in most countries, but smaller features or accidents of ground may enable a portion of a rear-guard to bring a much larger force for a time completely to a standstill.

An advancing column may even be temporarily checked by a few men, infantry or dismounted cavalry, occupying a copse, wood, or group of buildings on the main route.

In these details of conflict the knowledge which it has of the ground is much to the advantage of the rear-guard, as it can decide what points to make a stand at, what to pass over as untenable. In this respect its position seems better than that of the advanced-guard in the forward march, but the apparent superiority is fleeting, for the conditions under which the rear-guard and advanced-guard fight are widely different. The advanced-guard can push on with the confidence fairly engendered by knowing its supports to be approaching from the rear in any required force; the rear-guard, on the other hand, cannot but feel that the longer the conflict is protracted the farther it gets from its main body.

The rear-guard, therefore, has to consider a danger which does not exist for the advanced-guard, that of being cut off from its column should it remain too long in position and be successfully outflanked. If the rear-guard, however, can

hold its ground long enough to cause the enemy first to reconnoitre, and then to form up for attack, its purpose and object as a delaying force will have been effected for the moment, and the commander, on his flanks being threatened, may well retire, again to occupy a farther selected position, and again to retard the progress of his pursuers.

In close country every check thus given to the enemy obliges him to incur a considerable delay ; but the commander of the rear-guard must not forget, that he may be pursued by a column marching on a road to his flank, in addition to that immediately behind him. This is perhaps the greatest of all dangers against which he has to guard.

Should the position to be taken up by the rear-guard be an important one, its reserve will halt after passing the ground, and remain in such proximity thereto as may enable it, if necessary, to support the remainder of the force so long as required. But the enemy, knowing the result to himself of a position so advantageous being taken up by the rear-guard, will probably endeavour by every means in his power to push on by the flanks, and forestall his opponent in possession of the ground. The enemy can lose little by the attempt, and if at all successful the least evil that can result to the rear-guard will be that it must continue its retreat in all haste, and lose the chance presented of retarding the pursuit at this point, for fear of the greater evil of being cut off from its main body.

It has been suggested as a protection against such attempts, that the organization of the rear-guard might differ from that of the advanced-guard in an important particular. An intermediate body marching about half way between the reserve and the main column, if of sufficient strength, could push on to hold any ground of tactical importance until the reserve comes up. The existence of the ground in question would probably have been reported to the rear-guard commander from the front, and if his scouts on the flanks are doing their duty, he will also have timely notice of the enemy's intentions regarding it. Time may still, however, be wanting to get the reserve to the

position sufficiently soon to secure it, whereas if the intermediate party pushes on it may be more quickly seized, and held till the reserve arrives.

In cases where the nature of the country and the composition of the enemy's force enable him to execute turning movements with ease—as for instance if in fairly open ground he has plenty of light cavalry and appears to know how to use it—the main retreating column might leave troops behind it, to hold the tactical point until the intermediate detachment arrives. The latter, to carry out its purpose completely, which should comprise, not only seizing the ground, but holding it in such a manner as to impose upon the enemy, ought, in a mixed force, to be provided with guns. The presence of artillery will have a special effect in deceiving the enemy, as to the strength of the troops which already hold the position.

If the pursuit of a rear-guard, which has been actively carried on by the enemy up to a certain point, suddenly appears to cease, the commander should send out strong cavalry patrols to ascertain the cause. The enemy, it will be found, has either stopped in his pursuit on the main route, or he has taken a different direction and is still advancing. In the latter case active reconnaissance by cavalry patrols should immediately be undertaken by the rear-guard, the main column being also advised of the route taken by the enemy, that it may send out flanking detachments to feel for him.

In retreating through a defile, the heights on each side should be held by troops from the main body, until relieved by the infantry of the rear-guard. The entrance to the defile must then be defended until the enemy, forced to deploy, begins to assault the flanks on either side. The moment for retreat having arrived, the guns fire their last round of shrapnel, and disappear through the defile at a rapid pace, followed by the cavalry, and lastly by the infantry, the whole being covered by the fire of the flanking parties on the heights, which are the last to fall back.

A still warmer reception for the enemy, on his debouching



from the other end of the defile, is next prepared by the rear-guard. Guns are so placed, as to enfilade completely the defile or that portion of it near the farther entrance, and the cavalry is held in readiness, if the ground admits, to charge the enemy's flanks as he comes out of the defile, before he has time to form up. The infantry, in part, dispute possession of the heights commanding the near end of the defile, while the remainder bring a heavy fire to bear on the heads of the enemy's columns as they come into view.

Retarding action to a great extent can thus be exercised by a rear-guard upon the pursuing enemy, both at the near entrance and at the far side of a defile, the latter of the two being generally the stronger position.

An army retiring by more than one road, whose directions are generally parallel, would usually have a rear-guard upon each road under a separate commander, the rearmost groups being continued across the whole rear, and flankers only upon the outer flanks of the outer columns. The whole of these rear-guards would be included in one high command. The army would thus retire in as many columns as might be necessary, connection being kept up between the different main columns, and also between those of the rear-guards, at every cross road, and wherever the country may allow of communication.

No war material that could be useful to the enemy should be allowed in a retreat to fall into his hands. The rear-guard must destroy it if it cannot be removed. If hardly pressed, everything that could assist the enemy, such as standing corn and provisions, must be burnt, horses and wagons pressed and sent on to the main body. As an extreme measure, villages on the line of route must even be fired, if necessary to retard the pursuit.

MILITARY DEPARTMENT,  
UNIVERSITY OF CALIFORNIA.





# EXERCISE XIV.

## THE THREE ARMS COMBINED. REAR-GUARD HOLDING ADVANCED-GUARD.

### IDEA.\*

A force (Red) covered by a rear-guard is retreating from Upper Bascombe, *vid* Glenfield and Winsley Bridge, on Carsham; it is followed by a force (Blue), whose advanced-guard overtakes the rear-guard on the descent of Redburn Hill.

The rear-guard is ordered to delay the pursuing advanced-guard as long as possible, in order to enable Red's main column to take up a position on Churton Hill.

Strength of each side :

| <i>Red.</i> —Rear-guard. |      | <i>Blue.</i> —Advanced-guard. |       |
|--------------------------|------|-------------------------------|-------|
|                          | Men. |                               | Men.  |
| Infantry, 1 battalion    | 800  | Infantry, 2 battalions        | 1,600 |
| Cavalry, 1 squadron      | 96   | Cavalry, 4 squadrons          | 384   |
| Engineers                | 20   | Engineers                     | 30    |
| Two guns, 16 pounders.   |      | Six guns, 12 pounders.        |       |

### FIRST STAGE: 9 A.M. to 9.5 A.M.

*Red.*—The cavalry scouts of the rear party are retiring down the slopes of Redburn Hill towards Hanley Farm and Garrads Cross, when they are overtaken by Blue advanced scouts. Holding their positions for a time, the Red scouts are enabled to report before falling back, that Blue infantry is advancing on the Upper Bascombe Road, and that a body of cavalry is moving down the road between Ray and Ashdown Hills towards Glenfield Common.

\* When reading the Idea the student should refer to the small scale map of the surrounding country, which is given as a frontispiece, as well as to the special plate at the end of the Exercise.

From the main body of the squadron, which is between Five Roads Cross and Glenfield Bridge, a report is first sent that Chorley and Clip Bridges, lying to the west of the common, are not passable. A second report states that the enemy is coming down the hollow road from Redburn Hill, and that the pioneers of the Red squadron are in consequence preparing Glenfield Bridge for hasty demolition.

The commander of the rear-guard on receiving these reports determines, in order to carry out his instructions, to occupy Hanley Wood with two companies and Garrads Cross with two companies. His other half-battalion and the two guns have just crossed Garrads Bridge *en route* to Glenfield. The party of engineers have halted at the bridge. They are ordered to prepare it for destruction with all speed, in order to stop pursuit if required, as the stream is only fordable very high up, near its source. The guns are directed to trot up Rainham Hill, and to come into action on the high ground above Glenfield.

Orders are also sent to the commander of the squadron to hold Glenfield Bridge until it is prepared for demolition, and then to destroy it.

The tail of Red's main column has just left Glenfield and is about to commence the ascent of the hill to Cleveley Park. The head of the column has already crossed Winsley Bridge.

*Blue.*—The squadron which forms the advanced party has arrived opposite the Manor Farm on Redburn Hill. Here the advanced scouts come in contact with Red scouts, and report the enemy's infantry at Hanley Farm and along the Glenfield Road; also a body of Red cavalry near Five Roads Cross, and a heavy cloud of dust, apparently denoting a strong column, on Rainham Hill beyond the town of Glenfield.

The head of the support, one squadron and one battalion, is on the Upper Bascombe Road, 400 yards in rear of the advanced party. It has detached the squadron to examine Glenfield Common, moving thereto by the hollow road between Ray and Ashdown Hills. The squadron enters this road, preceded by advanced scouts and with flankers on either hill. The scouts reach the common, and come in contact with the scouts of Red cavalry, at the end of the stage.

The head of the reserve, six guns, one battalion, and two squadrons, is 500 yards in rear of the support.

The head of the main column is about 2,200 yards in rear of the point of the advanced-guard.

SECOND STAGE : 9.5 to 9.15 A.M.

*Red.*—Nos. 1 and 2 companies of the infantry battalion hold Hanley Wood. Nos. 3 and 4 companies maintain position at Garrads Cross. No. 5 company reaches the Royal Arms Inn, Nos. 6 and 7 companies occupy Glenfield, and No. 8 company is on the west side of the town.

The guns come into action at 9.11 A.M., on a spur of Rainham Hill about 400 yards south of Glenfield. From this point they open fire on Blue's infantry, now coming down the south slopes of Redburn Hill.

The squadron having fallen back over Glenfield Bridge, dismounts one troop with carbines to hold the bridge while it is being prepared for demolition. The men take post behind cover on the south bank of the stream close to the bridge. The scouts still remain on the north side of the stream. At the end of this stage they have to fall back before Blue cavalry, one squadron of which arrives at Five Cross Roads as if about to force passage of the bridge. The Blue squadron, however, draws off on report of its scouts and moves at a rapid pace to the west.

By 9.15 A.M. the tail of Red's main column is nearly opposite Cleveley Park House.

*Blue.*—The advanced party of Blue cavalry following its scouts down Redburn Hill, one troop on each road, finds itself under infantry fire from Hanley Wood. The troops accordingly draw off right and left.

The Blue infantry of the support (the leading battalion) has now come up. Half the battalion is ordered to attack Hanley Wood, and the other half to attack Garrads Cross.

The six guns are ordered to trot round by the hollow road, and find a position on the lower slopes of Ashdown Hill. By the end of this stage they have arrived and come into action at a point about 300 yards east of Five Roads Cross, behind a wooded feature,\* which shelters them from view of Red's guns now firing from Rainham Hill.

No. 1 squadron of the Blue cavalry has a troop on each flank of the infantry attack. No. 2 squadron, on arriving at

\* The trees here, which hardly amount to the dignity of a wood, are not shown in the two-inch map; they can be seen in the six-inch map.

the common, is about to attempt to cross Glenfield Bridge, but the scouts reporting that it is strongly held by Red, the commander thinks it better to endeavour to get round the flank by means of Farley Bridge. He accordingly continues his course in that direction. By 9.15 A.M. the squadron has crossed Farley Bridge and proceeded about 300 yards south of it in the direction of Chorley Farm. Nos. 3 and 4 squadrons follow as far as Glenfield Common, which they reach at the same hour.

By the end of this stage the left infantry attack has reached Hanley Farm, and the right attack is about the same distance on its way to Garrads Cross. The rear battalion has also come up to Redburn Hill, and is ordered to support each attack with half a battalion. During the last four minutes the right and left attacks have been under the artillery fire of guns from Rainham Hill, at ranges of about 1,600 and 1,900 yards respectively. The guns are firing shrapnel and appear to be heavier than the guns of the Blue force, but, so far as can be estimated, they are only two in number.

The Blue main column continues its march in rear.

#### THIRD STAGE : 9.15 to 9.25 A.M.

*Red.*—The Red guns continue their fire as long as the Blue infantry are clear of their own infantry. They then open on the rear battalion in support.

The squadron holding Glenfield Bridge is threatened by two Blue squadrons which have reached Five Roads Cross, and the Red scouts on the north bank have to fall back right and left. Blue scouts, however, on coming towards the bridge are met by the fire of Red dismounted cavalry who are posted behind cover on the south bank. The scouts fall back and Blue cavalry draws off towards Farley Bridge at a rapid pace.

At 9.20 A.M. Glenfield Bridge being prepared for demolition the Red scouts cross over to the south bank, and the bridge is blown up.

The squadron now proceeds to the east of Hook Wood to watch the road which affords passage over the stream near Spring Wood. The scouts report Blue cavalry moving round the flank towards Totley Bridge. Other Blue cavalry is reported to be near Chorley Farm at the end of the stage. These reports are instantly sent on to the commander of the rear-guard.

Of the Red infantry Nos. 1 and 2 companies are retiring alternately from Hanley Wood to Gorsham Hill. Nos. 3 and 4 companies fall back slowly over Garrads Bridge, which is then, at 9.23 A.M., blown up by the sappers who have prepared it for demolition. The companies, on crossing the stream, line the west bank, and keep up their fire on Blue's right attack. No. 5 company takes post behind the hedges of the field belonging to the Royal Arms Inn. Nos. 6 and 7 companies are still in Glenfield. No. 8 company has fallen back on Long Wood when it receives orders to proceed to the west side of Rainham Wood, in consequence of a report received by the commander of the movements of Blue cavalry.

By the end of this stage the tail of Red's main column is half-way between Winsley Bridge and Pawley Village.

*Blue.*—The guns on coming into action open fire at 9.15 A.M. on Garrads Cross and Hanley Wood, at ranges of 1,000 and 1,500 yards respectively. The battery, while firing at the Red infantry sheltering behind the walls and outbuildings of the houses at Garrads Cross, uses common shell, but when bringing the troops in the wood under fire employs shrapnel. The wooded feature alluded to prevents the Blue guns from being brought to bear on Glenfield Bridge.

No. 1 squadron of the cavalry has a troop on the right rear of the guns, and another troop on the extreme left of the infantry attacking force. By the end of this stage No. 2 squadron has reached the four cross roads on the high ground above Totley Bridge, west of Cleveley Park.

Nos. 3 and 4 squadrons, on reaching the Common, advance on Glenfield Bridge, but their scouts who are out in front, being met with fire from the south bank of the stream, fall back, reporting that the bridge is strongly held by *infantry*. The commander of the Blue cavalry accordingly determines to follow the leading squadron round by Farley Bridge. At 9.25 A.M. he has reached Chorley Farm.

By the end of this stage, also, both attacks of the Blue infantry have succeeded, and the Red infantry is driven out of its positions. The left attack has reached the south edge of Hanley Wood and the right attack has advanced about 200 yards through Garrads Cross. The two half-battalions in reserve are about 300 yards in rear of the supports of the leading companies.



## FOURTH STAGE: 9.25 to 9.35 A.M.

*Red.*—The Red guns continue their fire upon the Blue infantry as opportunities offer. Blue guns are seen moving through Garrads Cross, but the enemy's infantry being the principal arm during this stage, the Red fire is not diverted from it.

The squadron of Red cavalry concealed behind the east side of Hook Wood, has its advanced scouts out on the road which crosses the stream by Spring Wood. They retire before the scouts of Blue cavalry, which on its way to Totley Bridge turns up this road with the evident idea of thus coming quicker upon Red's flank. As the Blue scouts are supported by an advanced party they drive the opposing scouts before them on to the open ground north of Hook Wood. Following up their success they discover the Red squadron, which has moved forward rather too soon, with the intention of charging the head of the enemy's column in flank as it comes into view. The Blue scouts instantly give warning to the rear, in sufficient time for their main body, which is in column of fours on the road near Spring Wood, to go about and retire, covered by its former advanced party. The Red cavalry, having succeeded in its object of keeping Blue cavalry away from this part of the flank, does not follow up in pursuit beyond the open ground, but returns to Hook Wood. At the end of this stage the squadron receives orders to retire over Winsley Bridge.

Of the Red infantry Nos. 1 and 2 companies are driven back to Windmill Hill. Nos. 3 and 4 companies, finding that the Blue infantry on the opposite bank is making a flank move to cross the stream higher up near its source, fall back on No. 5 company, and all three companies line the hedges and fences adjoining the Royal Arms. Nos. 6 and 7 companies take post at the houses on the east side of Glenfield, and at the end of the stage open fire at about 500 yards range upon Blue infantry, which has succeeded in crossing the upper part of the stream, and is advancing towards the Royal Arms. No. 8 company has taken post just inside the border of the west side of Rainham Wood, and opens fire upon a Blue squadron which is attempting to turn the flank.

By the end of this stage the tail of Red's main column has just passed through Pawley Village.

*Blue.*—At an early part of this stage the Blue guns, finding

their fire masked by their own infantry, limber up and proceed by Garrads Cross to Triangle Wood, with intention of coming up on to Gorsham Hill.

No. 1 squadron of the Blue cavalry is with the guns at Triangle Wood. No. 2 squadron having reached the Red Lion Public-house near Totley Bridge turns up to the left along the river road, but on nearing Winsley Bridge it receives the fire of Red infantry concealed behind the border of Rainham Wood. The squadron turns and retreats with some loss and in considerable disorder over Totley Bridge, getting behind Totley Wood to re-form. Nos. 3 and 4 squadrons try to cross the stream by the road near Spring Wood, and being frustrated in their attempt continue their advance to Totley Bridge, reaching a point west of Cleveley Park by the end of the stage.

Of the Blue infantry the leading left half-battalion, followed up by the rear half-battalion in reserve, drives the enemy to Windmill Hill. The leading right half-battalion, finding Garrads Bridge destroyed, has to force the passage of the stream higher up under both artillery and infantry fire. Having suffered much loss it has been reinforced by its reserve half-battalion, and has advanced about midway between the stream and the Royal Arms Public-house.

#### FIFTH STAGE: 9.35 to 9.50 A.M.

*Red.*—At the commencement of this stage the guns retire and make for Winsley Bridge, coming up just in rear of the squadron of Red cavalry which is retreating from Hook Wood.

As the squadron after crossing the river in column of fours, passes clear of Totley Wood, it perceives a squadron of Blue cavalry behind the south side of the wood. The Red commander immediately forms line to the right, and threatens the enemy, while the two guns, passing on behind the squadron, come into action on the right of the road, masked by the Red cavalry.

Blue cavalry, which appears to be now reinforced by a second squadron, moves forward in echelon of squadrons to attack, but the Red squadron wheeling suddenly to its left discloses the guns, which firing two rounds of case, at about 250 yards' range, throw the Blue cavalry into utter confusion. Before it can recover it is charged by Red, and still further broken, being finally forced to retire upon Totley Bridge.

Meanwhile, however, a third squadron of Blue cavalry has

come up. On crossing Totley Bridge, and seeing how matters stand, its leader promptly wheels it to the left along the river bank, forming column of troops, and galloping round the north side of the wood, with one troop leading and the other in support, falls upon the right flank of the Red guns, which are in the act of limbering up.

The guns are fairly surprised and taken, but the captors do not succeed in carrying them off, for, as they are attempting to do so, some companies of Red infantry crossing Yatton Bridge in retreat, although disordered and in broken formations, bring such fire to bear upon the Blue squadron as to force it to give up its prizes, and to retire also over Totley Bridge.

The Red infantry during this stage is driven across the bridges; Nos. 1 and 2 companies in utter disorder over Stanton Bridge, and what remains of the other companies, through Rainham Woods, over Yatton and Winsley Bridges. Some of the men crossing the latter bridge arrive in time to save the Red guns as related.

In the withdrawal over the river, the rear-guard is assisted, for the last half of the stage, by the guns of the Red main column from Churton Hill.

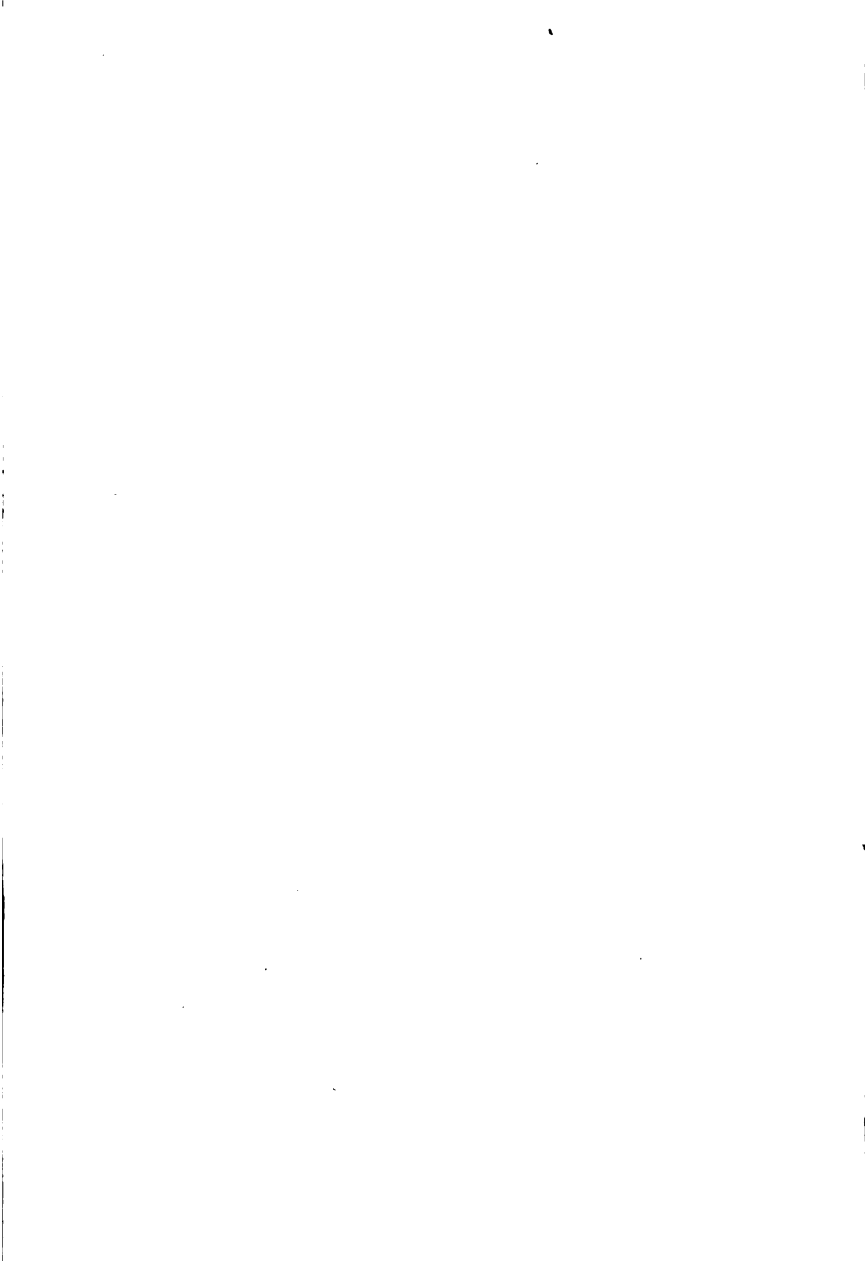
By the end of the stage the Red main column has fully reached Churton Hill, and has taken up its intended position thereon.

*Blue.*—At 9.40 A.M. four of Blue's guns come into action on the western crest of Gorsham Hill, against Red infantry retiring upon Rainham Wood. They fire shrapnel with great effect, at a range of about 1,000 yards. At the same time, the remaining two guns take post on Windmill Hill, to shell the companies retreating over Stanton Bridge, with indirect fire, at 900 yards' range.

No. 1 squadron of the cavalry is with the guns. The position and action of the other three squadrons have been shown.

Both attacks of the Blue infantry succeed. Windmill Hill is cleared of its defenders, such as are left of whom retire, completely demoralized, over Stanton Bridge. Glenfield is turned, and the Red companies holding it are cut off in their retreat, the greater part of the officers and men being killed or made prisoners. The right attack of Blue, when advancing from Gorsham Hill, receives assistance from the reserve half-battalion of the left attack.

Towards the end of this stage, the fire of the Blue guns





and also the advance in pursuit of Blue infantry, are checked by the fire of Red's artillery from Churton Hill.

#### OBSERVATIONS.

In this Exercise the rear-guard commander succeeds in carrying out the instructions he has received, which were, to check the advanced-guard as long as possible, so as to enable the Red main column to take up its position: but he has done so at the expense of his rear-guard, which is almost annihilated.

The same object would have been accomplished had the commander assumed at once a defensive attitude on Rainham Heights, in preference to making a preliminary stand in the valley. The disparity of the numbers of the contending forces would thereby have been counterbalanced by the superior strength of Red's position. The bridges having been destroyed on Glenfield Common, the attack would necessarily have taken place upon Gorsham Hill, which, garrisoned by the concentrated force of the rear-guard, would have been difficult to carry. The cavalry and a company of infantry might have guarded the left flank, much as in the actual case presented. When sufficient time had been gained, the rear-guard could have been withdrawn over Stanton and Yatton Bridges, with but little loss.

As regards the Blue cavalry movement to turn the flank, it was undoubtedly the only manner in which a superior force of cavalry could in this case be effectually employed, but the passage of Glenfield Bridge should have been attempted, instead of being assumed too difficult of accomplishment on insufficient grounds. The movement as carried out could never have had decisive results, and even the moderate success which the Blue squadrons met with in the fifth stage would have been rendered impossible, had the Red main column, on crossing the river, left guards at the bridges, more especially at those upon the flank of the main line of retreat. This should undoubtedly have been done by the commander of the Red forces.

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CHAPTER XIII.

## CONVOYS.\*

Convoys during military operations have for their object the transporting under escort all *matériel* required in war, such as ammunition, treasure, provisions, baggage, and equipment, as well as wounded men, sick, and prisoners of war. Railways in the present day, so far as the more civilised countries are concerned, supply much of the transport necessary for an army in the field, more especially as regards the second or interior line of transport, that from the base to the advanced magazine. But even in such localities, convoys by road and water are often required to supplement the railway transport, or to connect the various links. In less favoured lands, it is necessary to move all supplies by vehicle, pack-animal, or boat, and sometimes by human labour.

So far as the second line of transport is concerned, its complete military organization is not of so much importance as that of the first line, which conveys supplies from the advanced magazine to the divisional head-quarters of the fighting portion of the troops; from this point or points the regimental transport, if sufficient for the purpose, takes on the supplies as required to the various corps at the extreme front. The second line will usually comprise most, if not all, of the auxiliary or country transport, when a trained departmental corps is available to move with the advanced

\* Some portions of this chapter are reproduced from the report of a lecture given by the writer in 1880 at the Royal United Service Institution, permission having been granted by the Council.

troops. Railways, rivers, and canals play their part principally in the second line, but occasionally, if not often, both rail and water transport may be used to connect two points in the advanced line.

In the second line, although full military organization may be wanting, the officers and conductors should be military, and every effort ought to be made to introduce, so far as possible, into the working of this portion of the transport, a system in uniformity with that of the trained corps in the front.

In the first line, a strictly military organization and training for the transport corps of the army is indispensable. We may take it for granted that this is now so clearly established to be necessary, that no general valuing his reputation would take command in any future campaign, against an enemy skilled in scientific warfare, on any other conditions.

The organization of our present transport corps is much more military than in the past; we may therefore anticipate that the time-honoured inevitable friction between the combatant and the civilian elements in the transport service will soon have become a tale of the past, and with it many of the obstacles to its efficient working during military operations. The future transport officer of a convoy in the field will have always had a purely military training, as well as a technical one in his special transport duties. In addition to the transport officers who are in immediate command of their own men, those portions of the transport which march with the troops, and convey their baggage and supplies, are usually placed under the orders of baggage-masters, one to each brigade or division, who exercise a general command over the whole of the trains and their guards, and regulate their order of march.

When transport does not accompany the troops, but is moving in independent bodies from one point to another, the *convoys* proper so formed are no longer under the direction of baggage-masters, but are detached under separate command. They have a sufficient escort to protect them, in



case of attack, under the charge of an officer, whose orders all marching with the convoy must obey. Convoys of this kind would generally be by road, the supplies being conveyed by wheeled vehicles or pack-animals, sometimes by carriers ; they might, however, be by water, and occasionally by rail. We will, therefore, consider each in turn, both as regards their orders of march and their means of defence against attack.

#### A CONVOY BY ROAD.

The senior officer of the transport service attached to a convoy is immediately charged with its organization, *i.e.*, with everything connected with the men, horses, and vehicles composing the transport. He is responsible for the completeness of the equipment and for the loading being correctly effected, as well as for the animals being properly cared for, and the drivers kept under strict discipline. All arrangements, however, as regards orders of march of the carriages and *matériel*, must be made by the transport officer with due reference to the commander of the convoy, in order to ensure the proper disposal of the escort.

The commander of the convoy, on being named for the duty, should consider, with the help of his map and of such information as he can obtain, the following points :—

a. The distance and route which the convoy has to travel.

b. The position and strength of the enemy, and the quarter from which attack is to be apprehended.

c. The nature of the country, roads, &c., to be passed over.

d. The number of carriages and beasts of burden forming the convoy, with the nature of their loads.

e. The number and description of the troops detached for escort duty.

The distance and route must be known, in order to arrange the various details of the march, especially as regards the places where halts are to be made. Whether the enemy is near at hand or at a distance, the advance of the convoy

should be conducted with due regard to the possibility of attack, the precautions being redoubled when his close proximity renders attack probable.

The nature of the country should, if possible, be ascertained, in order to decide where the enemy would be likely to establish ambuscades or to attack in the open. The width and character of the roads are important considerations, as they will regulate, to a certain extent, the order and rate of march of the convoy. Lastly, lines presenting the most secure retreat from various points of possible attack must be duly ascertained, and from what quarters, in such case, assistance or reinforcements could be best procured.

It is evident that the composition and strength of the convoy, and its manner of formation on the line of march, must influence to a great extent the disposition to be made for its defence. The detailed plan of disposal of the various carriages or beasts of burden of the convoy, and the strength of its fractions, should therefore be arranged by the transport officer with the commander on the day or evening before the march.

The principles upon which the convoy should be organized for the march are exceedingly simple. The whole of the carriages, whether hired or military, should be told off into subdivisions of suitable strength, say about twenty-five carriages in each, under a transport officer. These may again be told off into sections of eight or twelve each, under conductors. The subdivision may be considered for the time as the tactical unit of the convoy.

The formation of a train of wagons or carts on the march is much affected by the character of the country to be traversed, which may be roughly classed as :—

*a.* Close country, including cultivated land, and hilly boggy or wooded ground, impassable for a convoy except on the roads.

*b.* Open uncultivated country, easily passed over in any direction by wagons and horses.

In the first case the line of march must as a rule be formed with a frontage of one vehicle only, unless the roads

are wide enough to admit of two abreast, in addition to space enough to allow of combatant troops passing freely by without check or hindrance; in the second case the wagons will march with as broad a frontage as circumstances will permit.

When moving over a difficult country, the method of working by units will be found all-important, the passage of bad places being made under personal superintendence of the subdivision officers, and strict control being thus enabled to be held at all times over the drivers while on the march. Should there be pack or led horses added to the convoy, it is usual to place them first as a distinct unit, or, if the country permits it, they may march on one or both flanks of the convoy, leaving the road clear for the wagons. If placed behind the carriages, they would suffer much in dry weather from the dust raised by the column, and in wet weather from the roads being cut up by the wheels of the preceding vehicles.

Although the order of march of the carriages must necessarily be influenced by various considerations, and be arranged in subordination to the conditions of each particular case, especially when the projects or probable movements of the enemy are known, the general principle to be maintained is, that those carriages whose safety is of most consequence to the army should march in the position most likely to preserve them from danger, usually with the leading subdivision. It is, however, generally advisable to send on the vehicles containing the baggage, cooking utensils, and rations of the troops of the escort and convoy, in the extreme front of the other wagons, so that they may reach the camping-ground first on the termination of each day's march. If the danger of attack is not imminent, these carriages, formed into a separate section under a warrant officer, may accompany the reserve of the advanced-guard.

Having considered these points, the commander can make his final dispositions for the security of the convoy on the march, having regard to the strength and composition of the escort placed at his disposal. In issuing his orders he

would probably find it desirable, in a mixed force, to dispose the escort somewhat as follows :—

- 1st. Advanced scouting parties.
- 2nd. Advanced-guard preceding the convoy.
- 3rd. Flank-guards on exposed flanks.
- 4th. Main body accompanying the convoy.
- 5th. Rear-guard following the convoy.

The advanced parties would be of cavalry, and need not be strong, as reconnaissance, not resistance, is their business. They would patrol to the front and to the flank or flanks, according to circumstances, extending in an open country to a distance of quite three to five miles from the convoy.

The advanced-guard should head the convoy well to the front, having its point at least a mile from the first carriage of the convoy. It would usually consist of infantry, with some cavalry to reconnoitre in front of the infantry advanced party. The cavalry should send patrols up all roads leading into that to be followed by the convoy, their scouts pushing on as far as possible without losing their touch. In an enclosed country these scouts will be the extreme feelers of the convoy, and much depends upon their intelligence and activity. In an open country the advanced cavalry scouting parties, sent out in the supposed direction of the enemy, form an outer screen, and will probably afford the earliest intimation of coming attack. A few pioneers or engineers carrying tools accompany the advanced-guard, for the purpose of repairing bad places in roads, clearing a temporarily obstructed bridge, or other like duties. The rear-guard should march close after the convoy, and be formed of infantry, with a small party of cavalry added.

If both flanks are exposed, a flank-guard would march on either side of the convoy, each guard being, in an open country, not less than half a mile from the main route. If only one flank is dangerous, one flank-guard would be sufficient. Should the country be close, the flank-guard would march on a parallel road, keeping roughly abreast of the convoy. The flank-guards in a large convoy would usually be composed of cavalry, mounted infantry and guns. If

mounted infantry is not available, either some infantry must be with the flank-guard, or sufficient cavalry to act effectively with dismounted action.

The place of the commander of the escort and convoy would be with the main body, which, composed of infantry, with artillery added in a strong escort, would march near the centre of the convoy.

The main body would usually furnish three small detachments, one for the front, another for the centre, and another for the rear of the convoy. These would always closely accompany the wagons, and supply the necessary guards for them. The rest of the main body, after furnishing all these detached parties, advanced- and rear-guards, flank-guards, and detachments, ought still to represent one-third of the whole strength of the escort. Its duty is to move to any threatened portion of the convoy, should the advanced-, flank-, or rear-guards be driven in, so that the centre, front, or rear detachments need not leave their position for the purpose of aiding one another, thereby for the time allowing their own part of the convoy to be unprotected. When a defile, bridge, or ford is about to be passed, if the rear appears secure, the main body, or a portion of it, should push on and march in front of the convoy, next after the advanced-guard. If the rear is threatened, the main body would fall back and follow the convoy in front of the rear-guard. In a close country, the main body would march preferably with that portion of the convoy most exposed to the enemy's attacks; generally, in such case, either the head or the tail of the column.

As the attack which the convoy will have most to fear will be that of cavalry accompanied by guns, and in some cases by mounted infantry, these arrangements are designed, so that the advanced cavalry may give early information to the advanced-guard, or to the flank-guard, as the case may be, of the enemy's presence, and that this body should then ward off the attack at such a distance from the convoy as to prevent the carriages from coming under hostile fire.

There may be occasions, especially if the escort is strong,

when the main body must not hesitate to support the action of the advanced- or flank-guard, and may advance to give the enemy combat on some distant position, should such be well suited to cover the march of the convoy, and to save it from the dire effects of long-range fire. In the event of success, there should, however, be no pursuit of the enemy, and the commander must, in any such encounter, remember that the fate of the main body will probably decide that of the convoy under his charge.

These considerations apply to the case of a convoy marching through an ordinary country, but in a very close, rugged, or mountainous locality, the cavalry scouting, upon which so much stress has been laid, must be somewhat restricted in its operations. Infantry may have in such cases, to flank the convoy as well as to head it, selected active scouts being pushed out as far across country as possible; but cavalry patrols can still be used and do good service on the roads and on mountain paths; and mounted infantry will always be useful, whenever it can be employed, to keep the enemy at a respectful distance.

The length or depth of a road convoy, whether consisting of beasts of burden, or of wheeled vehicles, can always be calculated from known data, some of which are established for all countries and circumstances, but others of which vary with local conditions. Thus we know that a four-wheeled Government wagon, with four horses or mules, two abreast, requires 12 yards of road, and that a cart with two horses or mules abreast takes 6 yards of road, an intervening distance between every two vehicles of 4 yards being always allowed. Hence, for each wagon we want 16 yards, and for each cart 10 yards. Should both kinds of vehicles be mixed in equal proportions, we can get the total correct depth of the convoy by allowing 13 yards per carriage. Thus, in a convoy of 50 four-horsed wagons and 50 carts, the proper depth of the column, without allowing for straggling, would be 1,300 yards; as  $(50 \times 16) + (50 \times 10) = 1,300$ . For pack-animals 4 yards may be allowed for each horse or mule, and 5 yards for each camel in file. Special calculations must

always be made for coolies, as the mode of carrying burdens varies in different countries.

Local variations in the data, and additions thereto, are of course often necessary. In New Zealand, the country two-wheeled cart was drawn during the war by two horses tandem fashion ; here 14 yards had necessarily to be allowed instead of 10 yards for each two-horsed cart in column of route. In Zululand, the ordinary ox wagon, with its span of 16 oxen, took about 28 yards of road, so that, with ordinary distances added between each two vehicles, a depth of at least 32 yards had to be estimated for every wagon in file. As a matter of fact, a little more was required, it being considered good driving when three wagons did not occupy more than 100 yards of road.

By such means an approximate estimate can be formed of the correct depth of the column which has to be guarded by the escort ; but any officer who has had practical experience of convoy work in the field well knows, that under the most favourable circumstances only are such estimates to be depended upon, even with a liberal allowance for straggling. The tendency of a road convoy to stretch out, tail, and straggle, when roads are bad, and horses tired and wet, is one of those adverse conditions of field service which can neither be guarded against nor ameliorated, but which must be patiently endured.

Whenever the width of the road will admit of it, the files of a wheeled convoy should be doubled, and it should march two carriages abreast. This should not, however, be done unless the roadway is sufficiently broad to allow of three carriages passing abreast of each other, with an interval between every two carriages. The width of a wagon may be taken at 5 feet, and there should be an interval between each two wagons of 4 feet, so that the arrangement would be possible only when the roadway was 25 feet or more in width. In any such disposition of the wagons great attention should be paid to there being room, for it should be one of the chief cares of officers on convoy duty not to block the road. This is especially to be looked to in the case of a train

or convoy sharing in the operations of large forces, when free passage to troops of all kinds, staff, and messengers at speed, must invariably be allowed.

Similarly, in the case of pack-animals, they should march two abreast when circumstances will allow of it, but a pack-animal when loaded requires quite as much, if not more, lateral space than a wagon or cart. An interval of frontage must be allowed, also, between pack-animals when moving abreast on a road.

The fact of the length of the column being thus reduced is a tactical consideration of much import to the commander when in immediate vicinity of the enemy; but the double order should not be resorted to on the ordinary march, unless it can be maintained for at least an hour without again reducing the frontage. In England, the hedged-in country roads would many of them not admit of a double file of wagons or carts on the march, without impeding the traffic, but on the Continent of Europe *chaussées* will often be found where the formation might be easily adopted. In Zululand, the open country, and it may also be said the general absence of roads which could be dignified with more than the name of tracks, suggested the expedient of moving with from two to five columns of wagons abreast, a mode of effectually reducing the depth of a convoy which was constantly used during the campaign, and which, under corresponding conditions, would always in future be adopted.

The kind of vehicle to be used by a road convoy must depend upon local conditions in a great degree. A certain number of service wagons are always sent with a field force when suitable for the country, but a large proportion of carriages of local construction will usually be employed. Almost every kind of vehicle was tried in the American War, and at the latter part of it, both sides settled down to the universal use of the long country wagon with 6 horses or mules, driven by a man who rode the near wheeler. Transport on wheels is always superior to pack transport, but in some countries none other than the latter can be used, owing to tracks which replace roads not being wide



enough for wheels, or the country being too mountainous, or otherwise unsuitable (as in the desert) for carriages of any description.

The average loads carried, including the equipment, by pack-animals, are as follows :—

|                         | Lbs.      |
|-------------------------|-----------|
| Donkey . . . . .        | 100       |
| Pack-bullock . . . . .  | 160       |
| Horse or mule . . . . . | 160-200   |
| Camel . . . . .         | 320-400   |
| Elephant . . . . .      | 820-1,200 |

Two pack-mules will therefore carry a load exclusive of pack-saddles of about 300 to 350 lbs. The same two animals will draw a load of 800 to 1,000 lbs. in a light cart, according to the nature of the roads. If pack-animals, therefore, are used, it is evident that the number to be provided, looked after and fed, will always be very great in proportion to the weight carried.\*

Spare *matériel* should always be taken by a convoy. There ought to be from 2 to 5 per cent., according to the distance to be marched, of spare animals and spare wagons or carts. Also a supply of spare wheels, poles, shafts, traces and ropes. Unless spare carts and wagons are taken, what happens is this : a wagon breaks down and its load is distributed amongst the other vehicles rather than be abandoned ; these are already fully loaded and now become over-weighted ; some of them accordingly collapse at bad places on the road, or the horses become done up before the march is ended. Unless spare horses are taken it is often extremely difficult to get the wagons up steep hills, or over rough parts of the route towards the end of a march. When there are spare horses they can be hooked in as leaders to each wagon in turn under such circumstances.

The pace of a convoy, including short halts, will rarely exceed two miles per hour, under fairly ordinary conditions. If the roads are heavy and the country hilly, no estimate

\* Wolseley.

whatever can be given of the progress. Under such circumstances hours may be consumed in advancing a single mile.

In very rough country, where the roads cut out of the sides of hills are badly constructed, it not unfrequently happens that a pack-horse or mule, or even a team and wagon, rolls over the outer edge, in spite of all precautions to prevent such a catastrophe. If the animals are not injured by the fall, they had best be hauled up the bank by a rope fastened round their necks, should the ground be too steep or slippery for them to obtain a footing.\*

It is of the most vital importance on convoy duty that personal supervision, of the strictest character, be given by transport officers and conductors on all occasions of watering their animals. It is not always sufficient to take a horse to the water, for should he decline to drink, the proverbial difficulty of how to make him do so must be solved, or else he will probably knock up during the ensuing march. Both horses and mules are often exceedingly capricious in their choice of water, and annoyingly suspicious of it when offered to them, even though they may be hot, tired, and dusty. An ignorant or careless driver will as likely as not, under these circumstances, remove his horses from the watering-place before they have even done more than wet their muzzles; † next day he will wonder why his team cannot work.

\* This is by no means as barbarous a method as it may seem to the casual reader, the horse and mule being provided by nature with very powerful elastic ligaments, which extend from the head to the withers along the top of the vertebræ of the neck, and are capable, as are also the strong muscles of the neck, of sustaining an enormous pressure. The rope, moreover, acts to a certain extent against the angle of the lower jaw, which is of great strength. A blanket should, however, be so adjusted under the rope as to prevent too much direct pressure upon the larynx or windpipe. The writer on one occasion, while in charge of a road convoy during the New Zealand War, recovered safely, in this fashion, a team of horses which had fallen down a steep bank, between 20 and 30 feet deep, into a wet ravine. A pair of leaders on the road were hooked on to the upper end of the rope and drew each horse, placed on its side, safely up the bank, without any difficulty.

† A handful of freshly-plucked grass, put into a bucket of water, often tempts a horse to begin to drink. Some years ago, when travelling

The halts to be made by a road convoy are of two kinds.—short halts and long halts. The former should take place every hour or half hour, according to requirements. They are made in open ground and, if possible, near water. The long halts are for the purpose of resting, and of providing refreshment for men and horses. They should only be made in positions well explored in advance by the cavalry, and also by the advanced-guard.

If the enemy is ascertained to be at a distance the wagons may be parked by being drawn up in any open space in column of subdivisions, the wagons of each subdivision being axletree to axletree, and a distance of 20 yards between the lines. The horses may either be fed as they stand in the teams, or else they may be taken out and picketed in front of their respective wagons.

If, on the other hand, the enemy is near, and there is danger of attack, some military formation of the wagons must be adopted, which will allow of the escort in immediate charge of the wagons and the drivers defending themselves and the horses to the best advantage. This is called *laagering* the wagons.

The best formation for the purpose is that of a hollow square, animals inwards, the wagons, axletree to axletree, as close as possible, the corners of the *laager* being protected by the corner wagons being drawn up obliquely to round off the angle.\*

Fig. 1, Plate XXVIII., represents a train of forty-eight wagons, moving in double column of route at about sixty yards' interval. Each column is numbered from the front, and is divided into three sections of six, twelve, and six

post in the island of Java, the writer saw this method practised by the native ostlers at the post-houses. Every horse, on being taken out of the carriage, was provided with a tub of water and grass. Those careless about drinking began by munching the grass, but sooner or later, generally in a few minutes, they took their fill from the bucket. Mules are sometimes even more fastidious about the water offered to them than horses.

\* Manual for field service, Royal Artillery, January 1, 1889.

wagons respectively, which answer to half the front face, one side face, and half the rear face.

On the command *Form laager*, the leading wagons of each column wheel inwards till they meet, then wheel again and form up close to one another as the centre of the front face. The rest of the wagons forming the front face form on them. The side-face sections turn inwards in succession, close interval on the leading wagon, and advance to their proper places (see Fig. 1). In the meantime, the rear-face wagons form line to the left or right, incline inwards, close interval on the centre, and form the rear face.

This laager can be formed very quickly.

An entrance can be made by running out one or two wagons, and running them back when the laager is to be closed.

An alternative way of forming the same laager is to advance in four columns of route at about twenty yards' interval. The columns are numbered from the front. The outer columns form the side faces of the square, the left centre column forms the front, and the right centre column the rear face.

This formation is made as quickly as the other, and although apparently more complicated, is not really so, as the front face is more easily formed from one flank than from the centre. The mode of procedure is illustrated by Fig. 2, Plate XXVIII.

A train moving along and confined to roads is peculiarly liable to confusion and disaster in case of attack, as a few horses killed may seriously hamper the advance or retreat. The chief object is to protect the horses from fire, which is most easily done by using the wagons as a screen.

Fig. 3, Plate XXVIII., represents a train of wagons moving along a road in column of route. In case of sudden attack the wagons are inclined across the road, and closed up as much as possible, thus affording fairly good cover to the horses. This plan is simple and easy to carry out, but requires with pairs a road 20 feet wide, and, of course, more with teams.

Fig. 4, Plate XXIX., represents a train advancing in double column on a wide road, and attacked on both flanks. In this case the wagons incline inwards till the horses' heads meet, and very effectual cover is thus given to both teams and drivers by the loaded wagons. A road 35 feet wide is wanted for this formation, and a corresponding increase with teams.

This plan is very handy for two-wheeled carts, as they can form up on a much narrower road. It is also useful in open country, when a train is advancing in double column, and is suddenly attacked by cavalry. It requires little or no previous training, and only takes a few seconds to carry out.

For a night halt a village may sometimes be selected, the outlets of which can be strongly occupied by the infantry, and which is not commanded by high ground within range. This is often a good position, as the houses will protect the teams, which may, therefore, be unhooked from the wagons with greater safety. Such a place would be especially suitable, if there should be a large open green or market-place surrounded by houses, in which the whole convoy could be parked in one square or oval ; but if the country were hostile and the people unfriendly, it would be dangerous. In the latter case a night halt had better be made in open ground, a laager being formed.

The laagers for night halts vary according to the time and means available for their construction, and the nature of the attack which has to be guarded against.

In most cases, the hollow square (Figs. 1 and 2, Plate XXVIII.) is the best formation ; but the shafts or poles, of all but the rear face, should be outwards, to facilitate the start on breaking up the laager. The animals are unhooked and picketed, as far as possible near their own wagons.

The shafts or poles may be unshipped and the wheels lashed together, the spaces under the wagons being blocked with bales, packing cases, forage, &c. Openings should be made in each face by drawing forward a wagon, which, in case of attack, can be at once run back.

If the interior space be not large enough, when the wagons are placed axle to axle, they may be ranged end on to enclose the square, the pole or shafts of each being secured under the body of the one in front of it (Fig. 5, Plate XXIX.).

If there should be a very large number of animals to take care of, and only a small escort with the wagons, it is advisable to make a square central laager with the wagons end on, and form small strong laagers at the two opposite angles (see Fig. 5, Plate XXIX.). The escort occupy the small laagers, and defend the large ones by flanking fire.

Should there be plenty of time and labour available, it is advisable to surround the laager with an entrenchment, far enough from it to allow space for the men to encamp or bivouac on. The laager thus acts as a pen for the animals, and also as a keep.

When an entrenchment surrounds a laager, a clear gangway of at least five yards in width, should be left between the wagons and the ground occupied by the troops. The cooking places and latrines must be outside the entrenchment, and no fires must be permitted in the immediate vicinity of the wagons.

The easiest ways of forming a laager for a temporary halt, or for one night, are shown in Fig. 6, Plate XXIX. These formations are the same in principle, the diamond shape giving more interior space, but being more troublesome to make. The great advantages are that there is no turning or twisting about in forming up, which is a great gain if the animals are tired or the ground heavy, also that every wagon is in position for the next start. If the ground allows the convoy to advance in parallel columns, the two leading vehicles would close in and form the apex; and then the remainder form their own side of the diamond or triangle.

During night halts the usual outpost arrangements must be made for security, whether the convoy is encamped in a village or in a laager.

## A CONVOY OF PRISONERS.

When a convoy is formed for the purpose of escorting prisoners to the rear, unusual difficulties present themselves to the commander. He has to consider the certain existence of a hostile feeling amongst the prisoners, and to guard against internal revolt as well as against external attack.

The commander of the convoy should speak the language of the prisoners, or else an interpreter must accompany him. The commander before starting should make out a list of the prisoners handed over to him, and tell them off into squads or companies under their own officers and non-commissioned officers.

All the soldiers who are prisoners will have been disarmed when first taken; but officers may have been allowed to retain their swords on giving their word of honour not to attempt to escape. The names of any such officers should be carefully noted, and they should sign a declaration in their own language to this effect.

If proceeding through an enemy's country, all communication between the people and the prisoners must be prevented. The prisoners should have their wants as regards food, &c., attended to, and every consideration should be shown to the feelings of brave men in this distressing position. At the same time all must be warned that those who attempt to escape will be shot, and that in the event of any hostile act on their part the guard will fire upon them without any hesitation. At night they should be placed in walled enclosures, or in any large buildings that may be at hand, and a cordon of sentries posted round them, with orders to shoot any one attempting to run the gauntlet and escape.

The commander of the convoy cannot be too kind or considerate to his prisoners, but he must also be firm and determined in putting down ruthlessly all attempts on their part to resist or to escape. He will make the usual dispositions of the escort on the march, to secure the convoy from attack. A special guard will always be detailed to take immediate charge of the prisoners.







## A CONVOY BY WATER.

When an officer is named for the command of a convoy about to proceed by water, he should hasten to acquire all the information possible regarding the nature and course of the river or canal to be traversed, in order that he may make his dispositions in accordance therewith. His arrangements will also to a certain extent depend upon the means to be employed for moving the boats of the convoy, and the consequent pace at which they will be able to proceed. The cavalry, mounted infantry, and guns, appointed for escort duty in a mixed force, will always move along the bank, but the infantry will only march when the convoy is unable to advance at a greater pace than two and a half to three miles an hour; this rate of progression represents what will probably be attained when the boats are propelled by oars, or towed by horses from the bank, or in some cases even when steam tugs are used if working against a strong current. When, on the other hand, the boats are able to advance at an increased speed, the infantry will usually be conveyed on board the vessels, in order not to delay the progress of the convoy.

When the rate of advance of the convoy does not exceed the marching powers of infantry, the general arrangement of the escort may be much the same as for a convoy by road, and the principles of action already suggested will in most particulars be applicable to the case of a convoy by water. The nature of the water-way will however influence the detailed disposition of the escort. Thus, if it is wide and the enemy known to be on one bank only, the escort may all march on that flank of the convoy, with the exception of a cavalry flanking patrol on the further bank. On the other hand, if the river is narrow and the position of the enemy doubtful, both banks and flanks must be occupied, and watched by the escort during the march. In either case some empty boats should accompany every strong convoy, placed at intervals in the column, for the purpose of conveying infantry of the main body from one bank to the other as may be required.

When the rate of progression exceeds three miles an hour, or the extreme pace which can be sustained by an infantry escort on the banks, the portion of the escort on shore will consist of mounted troops only. An advanced and rear guard (the latter very small) would be formed of cavalry, with perhaps some horse artillery guns accompanying the advanced-guard. A flank-guard would be formed much as in the case of a road convoy, and would include cavalry, horse artillery, and mounted infantry when available.

These troops would march about half a mile from the bank nearest to the enemy. When the point of attack is doubtful there should be a flank-guard on each bank. The leading boat of the convoy will carry the front detachment of infantry; similarly, the last boat will carry the rear detachment. The centre detachment will be broken up to furnish a small group of men as a guard for each loaded boat of the convoy, the remainder, if any men are left after the distribution of guards, being posted on board the centre boat. The main body, consisting of from one-third to one-half the infantry force, will be placed in special boats in advance of the centre of the column. No stores will be conveyed in the boats carrying the front and rear detachments and the main body.

Whenever during its progress through a varied country, the convoy approaches a defile, or close ground on either bank, where the cavalry advanced-guard may find reconnaissance a difficult process, and the passage through which would be especially dangerous if held by the enemy, the front detachment may be landed, and the speed of the convoy checked, in order to allow of the suspicious locality being searched by infantry before the convoy proceeds further.

At night the convoy would be anchored, either in mid-stream, or on the furthest side from the enemy, according to circumstances, an outpost being always established on shore. Similar modified precautions will be also taken during the day, when the convoy halts for the purpose of giving rest and refreshment to the men and horses.

In the event of the main body of the escort, on landing to

support the mounted troops, being driven back by the enemy, the infantry must try their best to get off again to the boats ; the convoy would then proceed as fast as possible down stream, or on their course, should the conditions render it feasible, the mounted part of the escort moving in a similar direction along the bank. Before as a final necessity abandoning the boats of the convoy they should invariably be scuttled.

#### A CONVOY BY RAIL.

The organization of a railway convoy in war time is somewhat similar to that of an ordinary goods train in time of peace. The stores are packed on trucks. A few third-class carriages should be added for the escort, part in front, part in rear, and the remainder in the centre of the train. The train should have one powerful engine in front and another behind. It had better be preceded by a pilot engine drawing a carriage or truck for the purpose of conveying the advanced-guard of the infantry escort, and of pioneering the convoy along the line.

The escort should not be nearly so strong as for a road or water convoy, both because it would entail too much loss of space to convey many men in the train, and because it would be impossible in case of an attack to bring a large force of men, stowed away in carriages and trucks, quickly enough into action to be of any service.

The escort should, therefore, be only of a moderate strength, proportioned to the size and importance of the convoy, and it would usually consist of infantry alone, all of whom would be conveyed by rail. Cavalry would, however, be sometimes employed in open country to scout on the flanks of the railway, when the length of journey to be made by the convoy does not exceed the distance which mounted troops could pass over in a two days' march. A portion of the force would start a full day in advance, and the remainder at successive intervals, so that the whole ground could be explored before the train passes through it. In more ordinary cases a convoy by rail depends entirely upon the protection it can carry for itself.

The commander of the convoy might take up his position in the guard's van, immediately in rear of the tender to the front engine, from which place he could best control the movements of the train, with assistance of the guard or conductor. A couple of good reconnoiters, keen-sighted men, should be placed on the engine for the purpose of assisting the engine-driver to look out for signals from the pilot train, or from the cavalry, if there are any, on the flanks, and to give the earliest warning of the enemy appearing in sight. The main body of the escort would be divided into a front and rear detachment of equal strength, and a reserve of one-half the whole.

The pilot train containing the advanced-guard under an officer, who should be accompanied by a railway official, would keep from half a mile to a mile, according as the country is close or open, in front of the convoy. It may be a good arrangement to add a second truck to the pilot train, containing a party of railway workmen and some twenty or thirty rails, fishplates, &c., in order to be able to remedy the most ordinary form of interruption to the traffic which would be attempted by an enemy. A few simple signals for the steam-whistle can be arranged between the pilot train and the convoy. On coming to any suspicious place the advanced-guard should dismount to examine it. A careful look-out must be kept from the engine of this train for any obstruction on the line, or appearance of tampering with the rails or sleepers, early notice of which should be signalled back to the convoy. Precautions of a similar character to these were taken during the Fenian raids in Canada, when troops had to be moved by rail into districts infested by raiders. A pilot engine carrying a staff officer always ran ahead of the train within signalling distance.\*

In contemplating the possibility of attack, the commander must bear in mind that the enemy has the power of peremptorily obstructing the progress of the convoy at any point of the line, if only that point can be reached by the raiders. The impediment offered to the advance may either be tem-

\* Wolseley.

porary, as when an obstacle is placed upon the rails, or of a more serious character, as when some of the rails are removed or destroyed. When the convoy is preceded by a pilot train the commander will be certain to receive timely notice of attack should the enemy break up the line, for the advanced-guard when stopped will transmit signal of danger to the rear. Should, however, a sudden attack be made upon the convoy by ambushed troops, whose presence the advanced-guard has failed to discover, it may generally be assumed that as the rails have just been traversed by the pilot train they are so far safe, and that the convoy train need not necessarily be stopped by the enemy's fire. On the contrary, if there is no apparent obstruction on the rails at the moment of attack, the order might be given to put on full steam and dash through the assailants, who probably are endeavouring to head the convoy in addition to bringing a flanking fire to bear upon it. If, however, any temporary obstacle has been placed upon the line, or, as may happen, the rails have been displaced by a gun-cotton explosion, after the passage of the pilot train over them, the engines of the convoy train must be at once reversed and the carriages run back some distance, in order to deprive the assailants of the advantage derived from their selected position. On the train coming to a stand the escort should dismount on the opposite side from the enemy, and form up under cover of the carriages for offensive or defensive action as may be thought best. If the enemy is defeated, the obstruction can be removed from the line and the convoy thus enabled to proceed. If, on the contrary, the escort is worsted in the encounter it must fall back fighting upon the train, which should move slowly along the line till all have gained the carriages, and then retreat at full speed. The advanced-guard would be cut off, but it might perhaps escape in the opposite direction.

Although the escort of a convoy by rail would not, as a rule, include artillery, there is no reason why in a flat open country, the train should not possess the advantage to be derived from the addition of one or two field guns carried on trucks. Guns were fired from trains both at Paris and

Metz by the French. The batteries so used were sent forward on the railway lines which were then standing, for offensive purposes, and were composed of an engine and one or more blinded wagons, each carrying a gun mounted to fire in all directions. The wagons appear to have stood well the firing of the guns. We ourselves made use of rifle-proof train batteries both at Alexandria and at Suakim for offensive purposes. There would, therefore, be no difficulty in preparing similar batteries to accompany and defend convoy trains, under circumstances which would render the addition of artillery to the escort of especial value. Some late instructions have been issued in respect to the manner of mounting guns on railway trucks, which show that the question has not been overlooked. We are told therein, that if protection or armour is required for the trucks, boiler plate is the best, as being bullet proof and taking up least room. When sleepers are available a protection can be quickly made, which is efficient against shrapnel or any but short range infantry fire. Sandbags if used must be well built and no attempt made to raise them higher than the side of the truck, or they will be shaken down after a few rounds. Rails cut to a convenient length, and secured by knees bolted to the deck of the truck, can also be used.

In considering the general possibilities of an attack upon a convoy, and the means of defence which he should employ, the commander must not disguise from himself that there are many advantages on the side of the assailants in such a contest. They will usually have been able to reconnoitre the country through which the convoy has to pass, if not already acquainted with it, and by means of spies will have doubtless become aware of the strength and composition of the escort and convoy, being possibly able to base their dispositions, unless special secrecy has been observed, on further knowledge of the intended hours of starting and exact destination of the convoy on each day of the march.

They can thus, in fact, choose the place, time, and moment of attack, on any selected portion of a long and often unavoidably straggling column.

These considerations have always claimed attention, but never more so than in the present day, when it may truly be anticipated that the danger is increased tenfold for a convoy, by the introduction of mounted infantry and machine guns, and by the more extended use of the dismounted service of cavalry. Against attacks from troops of these natures, aided by horse artillery, the task of successfully defending a convoy, or of passing it safely through a watchful enemy's country, will be more than ever difficult.

Against cavalry alone, the commander of a mixed escort need not fear much, for by proper tactical disposition of his infantry, he can usually ensure the safety of the convoy against such enterprise. But if guns form part of the raiding party, they must be kept at a distance ; for if brought to bear at effective range upon the carriages of the convoy, they would easily destroy the order of march by their fire, block up the road with disabled horses and vehicles, and as a general result render further progress impossible.

The commander of a convoy, therefore, in future operations, in order to succeed in an undertaking of ever increasing difficulty, must place his first reliance, as already suggested, on a system of well-devised scouting, to procure the best information of the enemy's position and be thus enabled to forestall his movements ; secondly he must depend on the watchfulness of his flank- and advanced-guards, composed of similar troops to those whose attack is anticipated, to interpose and keep the assailants at a distance till the convoy can pass out of danger ; and lastly he must hope for the good fortune to attend him, which so often befriends the resolute leader in a military enterprise who pushes boldly forward.



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